

JUN 7 2 1995

NYNEX

June 7, 1995

Mr. Marc Coleman
Sites Management Section
Vermont Department of Environmental Conservation
103 South Main Street
Waterbury, Vermont 05671-0404

RE: Site Investigation at Rutland, VT Garage (4751-07
VTDEC Site No. 94-1742

Dear Mr. Coleman:

Enclosed, please find a copy of the Site Investigation Report prepared for the above referenced facility.

If you should have any questions or require any further information, please feel free to contact me at (617) 743-6824.

Sincerely,


Michael G. LaRow
Project Manager

MGL/cay

Enclosure: As noted

cc: Barbara Levine w/encl.
21 West Way
Old Greenwich, CT 06870
Greg Tuthill w/encl.

JUN 1 2 1995

INITIAL SITE INVESTIGATION REPORT

**NYNEX Garage
Route 7
Rutland, Vermont**

SMS Site #94-1742
UST Facility #912


Prepared For:


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EXECUTIVE SUMMARY

On December 20, 1994, EnviroTEL, Inc. (EnviroTEL) performed environmental oversight and soil testing activities during underground storage tank (UST) removal activities performed at the NYNEX Garage facility located on Route 7 in Rutland, Vermont. A 4,000-gallon single wall steel, asphalt covered UST, and associated piping, including the vent, were excavated and removed from the NYNEX facility. The 64 inches (diameter) by 24 feet (length) tank was observed to have no holes or perforations, and minor rust and corrosion. Soil staining was observed within the entire excavation. Strong gasoline-like odors were present in soil removed from, and in the tank excavation. Groundwater was not encountered during UST removal activities. Approximately 50 to 60 cubic yards of petroleum-affected soil were removed from the excavation. Excavated soil was screened with a HNu photoionization detector (PID) for volatile vapor concentrations using standard jar-headspace partitioning methods. The highest headspace reading from the excavated soil was 280 parts-per-million by volume (ppmv). EnviroTEL immediately notified Mr. Mark Coleman, at the Vermont Department of Environmental Conservation (VT DEC) Underground Storage Tank Program, of site conditions. At Mr. Coleman's direction, the excavation was backfilled with the petroleum-affected soil and additional fill brought to the site. The bottom of the tank excavation was lined with 6-mil polyethylene sheeting, backfilled with petroleum-affected soil to approximately 2.5 feet below grade, and covered with polyethylene sheeting. The remainder of the excavation was brought to grade with bank run gravel, and crushed stone.

On January 23 and 24, 1995, six soil borings (B-1 through B-6), and six monitoring wells (MW-1 through MW-6) were installed at the site to provide information on subsurface soil and groundwater quality on the site. A total of six soil samples were submitted for analysis. A total petroleum hydrocarbon (TPH) concentration of 9,200 milligrams/kilogram (mg/kg) was detected in soil sample B-6. Volatile organic compound (VOC) concentrations, were detected below the reportable laboratory limit (BRL) in five of the six soil samples analyzed. Soil sample B-6 revealed VOC concentrations of toluene 900 micrograms/kilogram ($\mu\text{g/kg}$), ethylbenzene (7,300 $\mu\text{g/kg}$), and total xylenes (43,000 $\mu\text{g/kg}$). EnviroTEL also sampled the NYNEX Garage private well water from the water tap located inside the facility. VOC concentrations were determined to be below the reportable laboratory limit in the tap water sample.

On March 18, 1995, groundwater samples were collected from the six monitoring wells. A TPH concentration of 36 milligrams/liter (mg/L) was reported in the groundwater sample collected from MW-6. VOC were detected in five of the six groundwater samples submitted. A duplicate groundwater sample was collected from MW-1. VOC concentrations in samples MW-1 through MW-6 ranged as follows: benzene (3 $\mu\text{g/L}$ to 980 $\mu\text{g/L}$), toluene (1 $\mu\text{g/L}$ to 1,400 $\mu\text{g/L}$), ethylbenzene (1 $\mu\text{g/L}$ to 55 $\mu\text{g/L}$), and total xylenes (2 $\mu\text{g/L}$ to 580 $\mu\text{g/L}$). VOC concentrations were detected above the VT DEC Groundwater Standards for methyl tert butyl ether (MTBE) of 40 $\mu\text{g/L}$, and benzene of 5 $\mu\text{g/L}$, in five of the seven groundwater samples: MTBE MW-3 (130 $\mu\text{g/L}$) and MW-4 (140 $\mu\text{g/L}$), benzene MW-1 (59 $\mu\text{g/L}$), MW-3 (980 $\mu\text{g/L}$), MW-5 (300 $\mu\text{g/L}$), and MW-6 (6 $\mu\text{g/L}$).

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1.0 INTRODUCTION

EnviroTEL, Inc. (EnviroTEL) was retained by NYNEX to conduct a Site Investigation and prepare a Site Investigation Report for the NYNEX Garage Facility located on Route 7 in Rutland, Vermont (the Site). This Site Investigation Report was prepared in accordance with the requirements presented in Vermont Department of Environmental Conservation (VT DEC) Site Investigation Guidance Document (draft 1994).

Work at the Site was previously performed on December 20, 1994, by EnviroTEL, which included the removal a 4,000-gallon single wall steel gasoline underground storage tank (UST). The UST removal activities are summarized in a letter report prepared by EnviroTEL entitled "Underground Storage Tank Closure Report", dated April 24, 1995. A copy of the report is attached in Appendix C.

Field conditions, as described in the EnviroTEL UST Closure Report, indicated that a release of petroleum had occurred. During tank removal activities, soil staining was observed within the entire excavation, and a strong gasoline odor was present in soils removed from, and in the tank excavation. The highest headspace reading from the excavated soil was 280 parts-per-million by volume (ppmv). EnviroTEL immediately notified Mr. Mark Coleman at the VT DEC Underground Storage Tank Program of site conditions. At Mr. Coleman's direction, the excavation was backfilled with the petroleum-affected soil and additional fill brought to the site. The bottom of the tank excavation was lined with 6-mil polyethylene sheeting, backfilled with petroleum-affected soil to approximately 2.5 feet below grade, and covered with polyethylene sheeting. The remainder of the excavation was brought to grade with bank run gravel, and crushed stone. Two soil samples were collected from the bottom of the tank excavation following removal of the tank. Each soil sample was analyzed for total petroleum hydrocarbons-gasoline range organics (TPH-GRO) by US Environmental Protection Agency (USEPA) Method 8260, and volatile organic compounds (VOC) by US EPA Method 8020. The following concentrations were detected: TPH-GRO concentration of 9,400 milligrams/kilogram (mg/kg) for soil sample G BOT-1, and 17,000 mg/kg for G BOT-2. VOC were also detected in both soil samples collected from the bottom of the tank excavation, and include benzene, toluene, ethylbenzene and xylenes, (BTEX). These compounds are commonly detected after a petroleum release, and in this case, the concentrations of benzene, toluene, ethylbenzene, and xylenes exceeded the VT DEC Guideline Levels. The elevated TPH-GRO and VOC levels indicated that a release of petroleum products had occurred.

2.0 SCOPE OF WORK

The objective of the Site Investigation was to make an initial determination of the extent and magnitude of the identified release of gasoline to the environment, and to address all the requirements of VT DEC Underground Storage Tank Regulations, and the Vermont Site Investigation Guidance.

To accomplish these objectives, EnviroTEL performed the following tasks:

1. Six borings were drilled on-site on January 23, and 24, 1995, and two-inch diameter polyvinyl chloride (PVC) monitoring wells were installed in the borings;
2. Soil samples obtained during drilling were screened for the presence of volatile compounds using a HNu Systems Model PI-101 photoionization detector (PID) equipped with a 10.2 electron volt lamp. Selected soil samples were analyzed at a state-certified laboratory for TPH using Method ASTM D 3328-78 (a gas chromatograph/flame ionization detector [GC/FID] method), and for VOC using US EPA Method 8020 or 8260;
3. Groundwater samples were collected from the six monitoring wells on March 18, 1995, and were analyzed by a state-certified laboratory for TPH using Method ASTM D 3328-78 (a gas chromatograph/flame ionization detector [GC/FID] method), and VOC using US EPA Method 602, or 8260;
4. The locations and elevations of the monitoring wells were surveyed on March 18, 1995. Depth to water readings were taken on March 18, 1995, and piezometric elevations were calculated from the field data; and
5. Interviews with NYNEX personnel and public officials were conducted to obtain information on Site history and environmental compliance.

3.0 SITE DESCRIPTION

The Site is a property currently owned by Mr. I. R. Levine, leased to New England Telephone and Telegraph Company doing business as (dba) NYNEX, which is located on Route 7 in Rutland, Vermont. This property is identified on assessor's Map 6, Block 20, Lot 18. The Site location is shown on Figure 1, Topographic Site Map, and Figure 2, Vicinity Plan. Site features are presented on Figure 3, Monitoring Well and Soil Sample Location Plan, and Figure 4, Groundwater Gradient Plan.

The NYNEX leased property is used as a garage and vehicle maintenance facility and is located in a limited commercial, and agricultural area. The NYNEX building is of one story corrugated metal construction, without a basement, on concrete slab foundation. Topography on the Site and surrounding properties slopes from the northeast to the southwest, and storm water runoff is expected to drain in a westerly direction towards East Creek. Storm water catch basins were not observed on-site during Site investigation activities. Native soil on-site, based on observations made during test boring, consisted of medium to fine sand with lesser, varying amounts of silt and gravel. The depth to the water table, as gauged on March 18, 1995, in monitoring wells installed on-site, was between 6.0 and 8.0 feet.

4.0 SURROUNDING PROPERTIES, AND HUMAN AND ENVIRONMENTAL RECEPTORS

The area in which the Site is located is observed to be used for limited commercial and agricultural uses. Properties located in the vicinity of the Site were identified during a site walkover and from information obtained from the Town Assessor's Office. Surrounding properties appeared to be vacant or used for agricultural activities. According to the Town of Rutland Tax Map, the adjacent landowners to the NYNEX Garage are as follows:

Northeast:	Across from Route 7, Mr. John P. Faignant
Northwest:	Mr. F. Kruk
South/Southwest:	Across East Creek, Mr. Peter Polli, Mr. Greg Polli, and Mr. James and Ms. Rhonda Grace
Southeast:	The Stewart Smith Estate

According to the information obtained from the Town of Rutland officials, the Site is located on a potentially productive high yield aquifer. The Site is located within 0.5 miles of a Well Head Protection Area for Country Side Estates which is located approximately 0.5 mile to the east. A school is not located with 1,000 feet of the Site.

The western portion of the NYNEX property abuts East Creek, and the Site is located in the 100-year floodplain of East Creek. The Site also contains approximately 60,000 square feet of a Class II Wetland, which are located along the southwestern section of the Site, abutting East Creek.

Located on the Site is a NYNEX private water well used for potable water supply. Well construction details for the NYNEX well are unknown. The location of the private drinking water well is provided on the attached Site Plan

5.0 SITE HISTORY AND REGULATORY COMPLIANCE HISTORY

5.1 General Site History of Ownership and Usage

The current owner of the Site is Mr. I. R. Levine. The Site is leased to New England Telephone and Telegraph Company doing business as (dba) NYNEX. The NYNEX contact is Mr. Mike LaRow, NYNEX - New England, Room 1006, 125 High Street, Boston, Massachusetts, 02110, (617) 743-6824.

Mr. Richard DelBianco from the Town of Rutland Town Clerk's Office was interviewed by telephone regarding current and past information on the owners of the Site.

Current and Previous Owners of Site

Owner	Date Purchased	Property Usage
Mr. I. Robert Levine	October 31, 1983	The property is currently used as a NYNEX garage facility.
Mr. David Rosen	July 29, 1970	Mr. Rosen bought the vacant land and built the current garage for NYNEX.
Mr. Stewart Smith	*	Vacant Land

* The date Mr. Smith bought the property could not be obtained.

The Site was originally a vacant parcel of land owned by Mr. Stewart Smith until he sold the property to Mr. David Rosen in July, 1970. Mr. Rosen built the current structure on the Site and leased the Site to NYNEX. The Site was then transferred into a Trust for Mr. Rosen, and eventually sold to Mr. I. Robert Levine in October, 1989. The current use of the property is as a NYNEX Garage. The Site is not known to have had any particular use, other than as by NYNEX.

5.2 Site Visit

A Site Visit was performed by EnviroTEL for NYNEX on January 24, 1994. During the site visit, three floor drains were observed in the garage area of the NYNEX Garage facility. The floor drains discharge outside the facility into an oil and water separator. The effluent from the oil and water separator discharges to the open field located south of the building. A 350-gallon aboveground storage tank (AST) containing waste oil is located on the Site. The following materials were observed in the repair area of the garage by EnviroTEL: a 120-pound container of gear oil, one 55-gallon drum of transmission fluid, one 55-gallon unlabeled drum with unknown contents, two 120-pound containers of grease, two 55-gallon drums of antifreeze, and one 55-gallon drum of used antifreeze. The storage area in the garage had two 5-gallon containers of hydraulic fluid, two 120-pound containers of truck and trailer wash, one 120-pound container of engine degreaser, one 5-gallon container of automatic transmission fluid, and one 5-gallon container labeled Oilzum. The supply area contained fifteen 5-gallon containers of hydraulic fluid. The garage area contained one 33-gallon drum used for oil filters, and one 120-pound grease container.

On December 20, 1994, EnviroTEL performed environmental oversight and soil testing during Underground Storage Tank (UST) removal activities on the NYNEX property. This work is summarized in Section 1.

6.0 SUBSURFACE INVESTIGATION

6.1 Subsurface Soil Investigation

The objective of the test (soil) boring program was to evaluate the subsurface soil conditions at the Site in the location of the former 4,000-gallon gasoline UST. The locations of the borings, and other relevant Site features are depicted on Figure 2, Vicinity Plan, and Figure 3, Site and Monitoring Well Location Plan.

6.1.1 Test Boring On January 23, and 24, 1995, Seaboard Environmental Drilling of Springfield, Massachusetts drilled six 15-foot deep test borings using a truck-mounted drill rig, under the supervision of an EnviroTEL geologist. Borings were identified as B-1 through B-6. Borings B-1, and B-4 were advanced up gradient of the former location of the UST, borings B-2, B-3 and B-5 were advanced down gradient of the former location of the UST, and B-6 was advanced off the southeast building corner in the vicinity of the oil and water separator. Test borings were advanced using 4.25-inch hollow-stem augers, and split-spoon soil samples were collected using the Standard Penetration Test. Each boring was terminated between 12 and 17 feet below ground surface. Boring refusal, at suspected bedrock, was encountered in boring B-4 at 13.5 feet below ground surface. Sampling depths and detailed descriptions of soil are presented on the test boring logs which are included in Appendix A. Subsurface soil at the site generally consisted of brown medium to fine sand from the surface to approximately six feet below grade, and olive/brown coarse to fine sand with little gravel and silt, from approximately six feet to borehole completion. In B-5, underlying the medium fine brown sand, was a gravel and cobble layer approximately seven feet thick. In BW-6 fill and concrete were observed from five to seven feet below ground surface, black (heavily stained) fine sand and silt from 7 to 11 feet below ground surface, and brown coarse to fine sand with little gravel and traces of silt to borehole completion at 15 feet below ground surface. Auger refusal occurred in test boring B-4 at approximately 13.5 feet.

6.1.2 Field Screening and Laboratory Analyses of Subsurface Soils Soil samples were collected directly from the split-spoon sampler and transferred into the appropriate container. Split-spoon soil samples were field screened for volatile compounds using a PID equipped with a 10.2 electron-volt lamp, and the headspace method. The PID was calibrated to a benzene analogue. The headspace analysis field screening technique measures relative volatile vapor concentrations in soil. The peak headspace screening value for soil samples collected during test borings was 200 ppmv in B-1. PID screening values are included on the test boring logs, and are summarized in Table 1.

The soil sample collected from each boring which exhibited the highest PID screening value was analyzed for VOC using US EPA Method 8020 including MTBE, with the exception of B-6, which was analyzed for VOC using US EPA 8260, and TPH using ASTM D3328-78 and petroleum hydrocarbon fingerprint characterization by GC/FID. The samples were packed on ice in a cooler and submitted to Groundwater Analytical, Inc. located in Buzzards Bay, Massachusetts under standard chain-of-custody procedures.

TPH was detected in soil sample B-6, at a concentration of 9,200 mg/kg. The petroleum hydrocarbon fingerprint characterization indicate that the sample had characteristics that are similar to a mixture of kerosene, petroleum products in the fuel oil range, weathered gasoline, a lubricating oil in the n-C 20 to n-C 34 range and polar components in the n-C 17 to n-C 18 range.

VOC concentrations were not reported in five of six soil samples analyzed. VOC concentrations in sample B-6 were as follows: toluene (900 µg/kg), ethylbenzene (7,300 µg/kg), and total xylenes (43,000 µg/kg).

According to a VT DEC representative, Mr. Bob Halsam, the VT DEC has not formally adopted specific soil concentration standards for hazardous materials in soil. However, the VT DEC follows the soil guideline level of 20 times the VT DEC Groundwater Standard for hazardous compounds. The VT DEC also follows a guideline level of 1,000 mg/kg of TPH for a non-residential area. The VT DEC does not have formal groundwater concentrations for TPH.

6.2 Groundwater Investigation

Six monitoring wells were installed during the Site Investigation for the purpose of collecting groundwater quality samples, and to obtain piezometric data for evaluation of the hydraulic gradient at the Site. The locations of the wells are shown on Figure 2.

6.2.1 Monitoring Well Construction On January 23, and 24, 1995, two-inch-diameter monitoring wells, MW-1 through MW-6, were installed in respective boreholes advanced during the test borings. The wells were constructed of two-inch-diameter, thread-coupled Schedule 40 PVC materials. Ten-foot lengths of 0.010-inch slot machine-slotted well screen were set at the bottom of the boreholes. The annuli around the screens were packed with Ottawa Filter Sand to a depth of approximately one foot above the well screen. A one- to two-foot thick bentonite seal was placed on top of the sand pack.

The annular space around the riser pipe was backfilled with drill cuttings, and the wells were completed with road boxes cemented flush with the ground surface. Locking expansion plugs were installed the tops of the PVC casing on the wells. Well completion details for the wells are provided on the test boring logs included in Appendix B, and are summarized in Table 2. Monitoring wells were developed by a combination of surging and pumping.

6.2.2 Monitoring Well Gauging The locations and elevations of the tops of the PVC casing of wells MW-1 through MW-6 were surveyed using standard leveling and stadia techniques, relative to an arbitrary datum of 100 feet located on the top of the PVC casing of well MW-1.

On March 18, 1995, the monitoring wells were gauged for depths to water and the presence of any separate-phase hydrocarbons using an oil and water interface probe which is capable of measuring depth to water and any separate-phase hydrocarbons to the nearest 0.01 of a foot. Separate-phase hydrocarbons were not detected in any of the wells. Depths to water ranged from 6.01 feet below

ground surface in well MW-4, to 8.00 feet below ground surface in well MW-6. Well gauging data is summarized on Table 3.

6.2.3 Groundwater Sampling and Analyses

On March 18, 1995, groundwater samples were collected from the monitoring wells. Prior to sample collection, the wells were purged of standing water. Five well volumes were bailed from each well. During bailing, the pH, temperature and specific conductance of water samples were measured in the field, and these parameters stabilized during the purging process. The samples were kept chilled, and were delivered under chain-of-custody by laboratory courier to Groundwater Analytical, Inc. for analysis for VOC using US EPA Method 602, except for the groundwater sample collected from well MW-6 which was analyzed for VOC by US EPA Method 8260, and for TPH by ASTM D3328-78 and petroleum hydrocarbon fingerprint by GC/FID. A TPH concentration of 36 milligrams/liter (mg/L) was detected in the groundwater sample from MW-6. The sample has GC/FID characteristics that are similar to petroleum products in the n-C 9 to n-C 22 range and a lubricating oil in the n-C 22 to n-C 34 range. Currently, the VT DEC does not have a groundwater standard regarding concentrations of TPH in groundwater.

VOC concentrations were detected above the VT DEC Groundwater Standards for methyl tert butyl ether (MTBE) of 40 µg/L, and benzene of 5 µg/L, in five of the six groundwater samples: MTBE MW-3 (130 µg/L) and MW-4 (140 µg/L); benzene MW-1 (59 µg/L), MW-3 (980 µg/L), MW-5 (300 µg/L), and MW-6 (6 µg/L).

The complete set of analytical results for the soil and groundwater samples is presented in Appendix B.

7.0 HYDROGEOLOGY

7.1 Depth to Water Table and Hydraulic Gradient

Well gauging data was coupled with the wellhead elevation data to calculate piezometric elevations in the wells for the phreatic (water table) aquifer. The calculated hydraulic gradient at the Site in the vicinity of the former location of the 4,000-gallon gasoline UST is 0.01. The local gradient probably is influence by the East Creek which abuts the western side of the Site.

7.2 Soil Description and Characteristics

Unconsolidated soil in both the unsaturated (vadose) and the saturated zones predominantly consists of medium to fine sand, with lesser amounts of gravel (generally little) and silt (generally trace). The deposit is interpreted to be glacial outwash or alluvial in origin. Because of the apparent low content of silt and clay, the soil is expected to have a low capacity for contaminant adsorption.

7.3 Aquifer Characteristics

The unconsolidated aquifer is a phreatic (water table) aquifer. The thickness of the unconsolidated aquifer was not determined, because the borings were terminated at a depth of approximately 15 feet. Therefore, the minimum saturated thickness is approximately five feet.

The saturated hydraulic conductivity is estimated to be approximately 10^{-3} centimeter/second or 2.8 feet/day (Applied Hydrology, C.W. Fetter, MacMillan, 1988). The transmissivity is not known, but would be greater than approximately 14 feet²/day (minimum aquifer thickness of five feet).

7.4 Bedrock

Boring refusal, at suspected bedrock, was encountered in boring B-4 at 13.5 feet below ground surface. No bedrock outcrops were observed on the Site. A bedrock outcrop comprised of marble is present on the eastern side of US Route 7, in front of the Site.

7.5 Contaminant Migration

No barriers to, or conduits for, contaminant migration, either natural or manmade were noted on the Site. Subsurface soil is relatively permeable, which would permit migration of dissolved-phase contaminants.

8.0 CONCLUSIONS AND RECOMMENDATIONS

In December of 1994, a 4,000-gallon gasoline UST was removed from the Site. During tank removal activities, which were supervised by EnviroTEL, PID readings up to a maximum of 280 ppmv were recorded from soil samples collected from beneath the UST. Elevated TPH concentrations of 9,400 mg/kg and 17,000 mg/kg, and elevated VOC concentrations of benzene (120,000 µg/kg and 160,000 µg/kg), toluene (730,000 µg/kg and 1,130,000 µg/kg), ethylbenzene (200,000 µg/kg and 300,000 µg/kg), and total xylenes (930,000 µg/kg and 1,440,000 µg/kg), were recorded for soil samples collected from the beneath the UST. This data indicated a relatively severe release of gasoline from the UST or due to associated UST operations, that had occurred in the immediate vicinity of the tank. In response to the release, EnviroTEL performed a Site Investigation of the NYNEX property located on Route 7 in Rutland, Vermont in January and March of 1995.

Aromatic VOC were reported in soil sample B-6 at the following concentrations: toluene (900 µg/kg), ethylbenzene (7,300 µg/kg), and total xylenes (43,000 µg/kg). TPH was reported in sample B-6 at a concentration of 9,200 mg/kg. Boring B-6 was drilled approximately eight feet downgradient from the oil and water separator. VOC were not reported in soil samples collected from the other borings.

Based on the analysis of soil samples collected by EnviroTEL from the Site during completion of the Site Investigation, the release does not appear to have resulted in widespread contamination of soil. The

release appears to have been confined to soil immediately surrounding the tank. A PID screening value of 200 ppmv was recorded for soil collected from the five foot to seven foot depth range in boring B-1, which was located adjacent to the former tank location. A soil sample collected from the same interval in boring B-1, revealed VOC concentrations below the reportable laboratory limit.

Aromatic VOC concentrations were detected above the VT DEC Groundwater Standards for methyl tert butyl ether (MTBE) of 40 µg/L, and benzene of 5 µg/L, in five of the six groundwater samples: MTBE MW-3 (130 µg/L) and MW-4 (140 µg/L); benzene MW-1 (59 µg/L), MW-3 (980 µg/L), MW-5 (300 µg/L), and MW-6 (6 µg/L).

Based on the analysis of groundwater samples collected from the monitoring wells, the release of petroleum products has affected groundwater quality, and VOC have been detected in monitoring wells situated downgradient of the former UST location.

Based on the observations made during initial site investigation activities, soil and groundwater sampling, and limited site assessment activities regarding the Site, EnviroTEL recommends further environmental site investigation activities in the following areas:

- Additional soil and groundwater sampling in the vicinity of the oil and water separator ^{use 8240} - holding tank to determine the horizontal and vertical extent of contamination.
- Additional testing of downgradient soil and groundwater of the former 4,000-gallon gasoline tank to determine the extent of benzene and MTBE impact on the site.
- Additional testing of the soil and groundwater in the vicinity of the former 4,000-gallon gasoline tank

9.0 REFERENCES

DelBianco, Richard. Town of Rutland, Town Clerks Office, Telephone conversation with Paul Plagge, EnviroTEL. April 13, 1995.

Guidance Documents to Evaluate and Remediate Hazardous Waste Sites. May, 1994. Vermont Department of Environmental Conservation, Hazardous Materials Management Division, Sites Management Section.

Underground Storage Tank Closure Report for NYNEX Garage, Route 7, Rutland, Vermont. EnviroTEL, Inc., April 24, 1995.

Table 1
Summary of Field Screening Results - Soil Borings

Boring Number	Sample Depth (ft bgs)	Total Volatile Compounds (ppm.)
B-1	0.0 - 5.0	4.5
	5.0 - 7.0	200
	7.0 - 10.0	0.4
	10.0 - 12.0	25
B-2	0.0 - 1.0	ND
	1.0 - 3.0	< 1
	5.0 - 7.0	< 1
	7.0 - 9.0	< 1
	15.0 - 17.0	< 1
B-3	0.0 - 3.0	10
	3.0 - 5.0	80
	5.0 - 7.0	35
	8.0 - 10.0	20
	10.0 - 12.0	20
	15.0 - 17.0	12
B-4	1.0 - 3.0	ND
	5.0 - 7.0	ND
	7.0 - 10.0	ND
	10.0 - 12.0	ND

ND = Non-Detect

Table 1 - Continued

Summary of Field Screening Results - Soil Borings

Boring Number	Sample Depth (ft bgs)	Total Volatile Compounds (ppm.)
B-5	1.0 - 3.0	ND
	5.0 - 7.0	ND
	8.0 - 10.0	ND
	10.0 - 12.0	ND
	15.0 - 17.0	ND
B-6	0.0 - 2.0	ND
	5.0 - 7.0	ND
	7.0 - 9.0	65
	9.0 - 11.0	65
	11.0 - 13.0	45
	13.0 - 15.0	35

ND = Non-Detect

Table 2
Summary of Water Table Elevations

Monitoring Well Number	Top of Casing	Top of Riser	Depth to Water (TOR)	Water Table Elevation
MW-1	100.25	100	7.65	92.35
MW-2	98.92	98.79	6.99	91.80
MW-3	99.54	99.10	7.15	91.95
MW-4	99.29	98.64	6.01	92.63
MW-5	98.93	98.79	7.03	91.76
MW-6	100.31	100.14	8.00	92.14

Table 3
Soil Results Summary - TPH
(units mg/kg)

ASTM D3328-78 Modified Analysis

Compounds	Guideline (mg/kg)	B-6 (mg/kg)
Total Petroleum Hydrocarbons	1,000	9,200

* VT DEC does not have a formal standard regarding TPH levels in soil, however, VT DEC uses a Guideline Level of 1,000 mg/kg for sites in non-residential areas.

Table 4
Soil Results Summary - VOC

US EPA VOC 8020 and 8260 Analysis

* 20

Compounds	Guideline* (µg/kg)	B-1 (µg/kg)	B-2 (µg/kg)	B-3 (µg/kg)	B-4 (µg/kg)	B-5 (µg/kg)	B-6 (µg/kg)
Toluene	20,000	BRL	BRL	BRL	BRL	BRL	900
Ethylbenzene	14,000 13,600	BRL	BRL	BRL	BRL	BRL	7,300
Total Xylenes (VGES = 400)	200,000 8,000	BRL	BRL	BRL	BRL	BRL	43,000

* VT DEC does not have formal standards for oil or hazardous materials in soil, however, the VT DEC uses a Guideline Level of 20 Times the VT DEC Drinking Water Standard as shown.
BRL Below Reportable Limit.

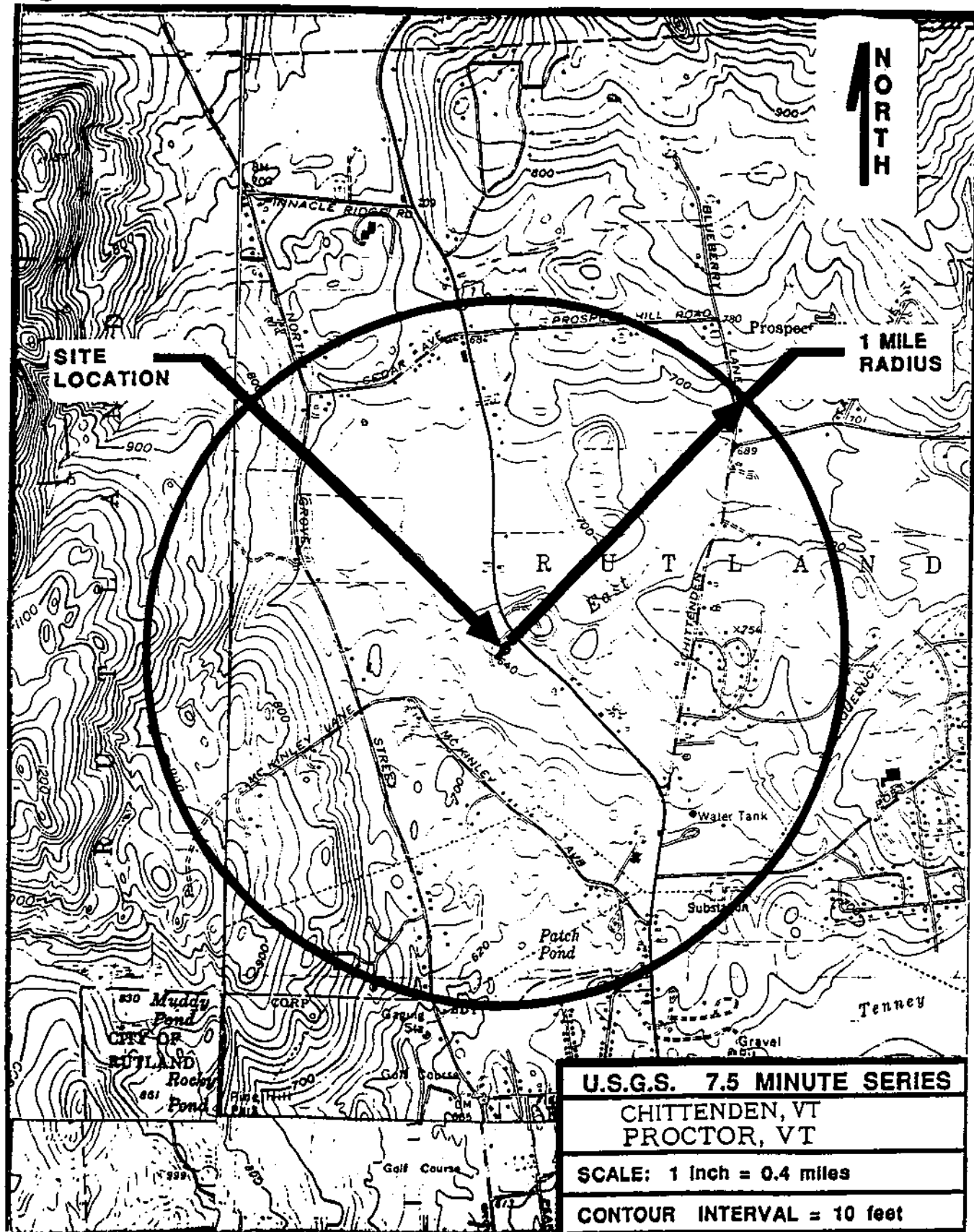
Table 5
Groundwater Results Summary - VOC and TPH

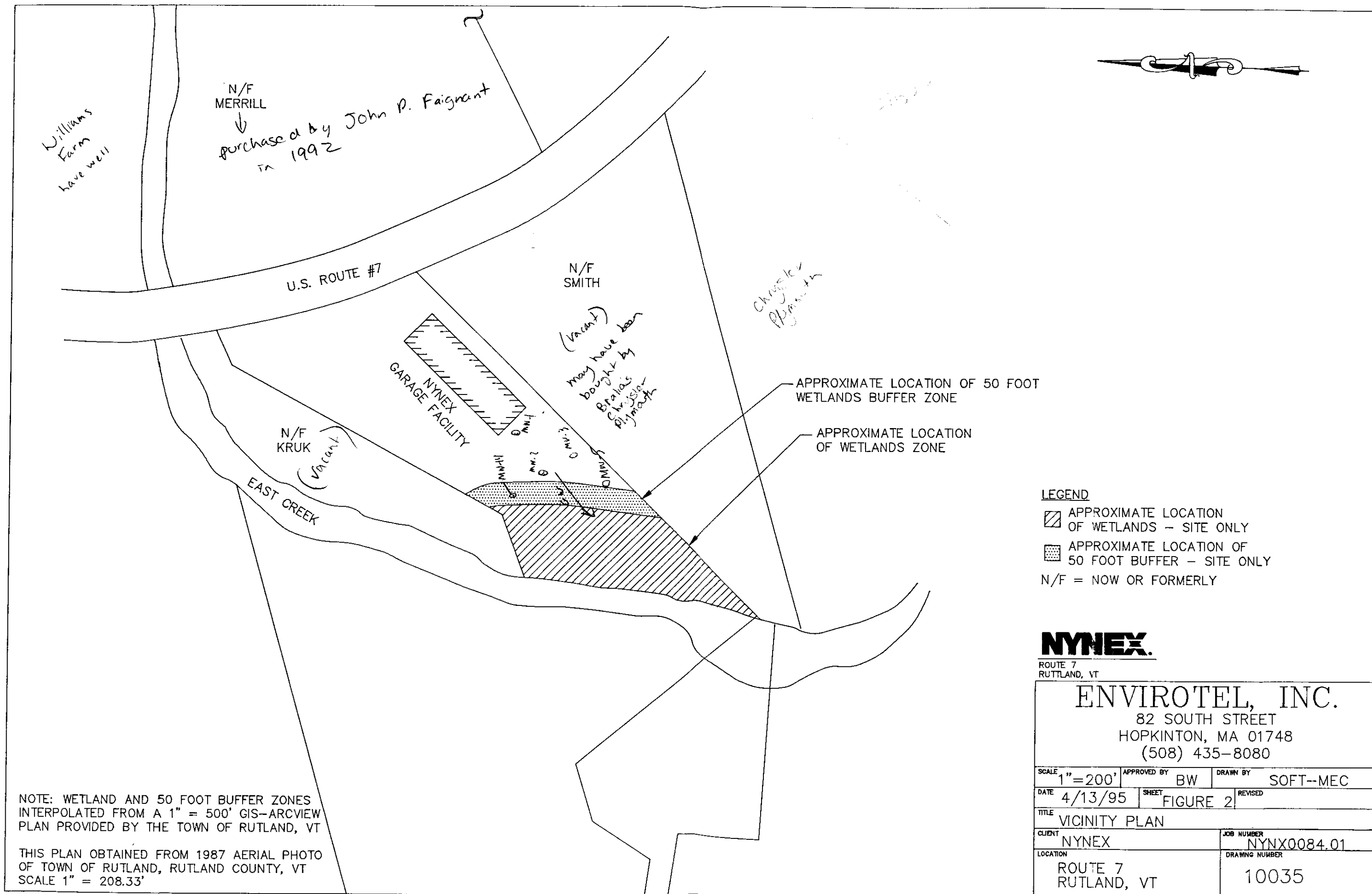
US EPA Method 602 and 8260 Analysis
ASTM D3328-78 Analysis

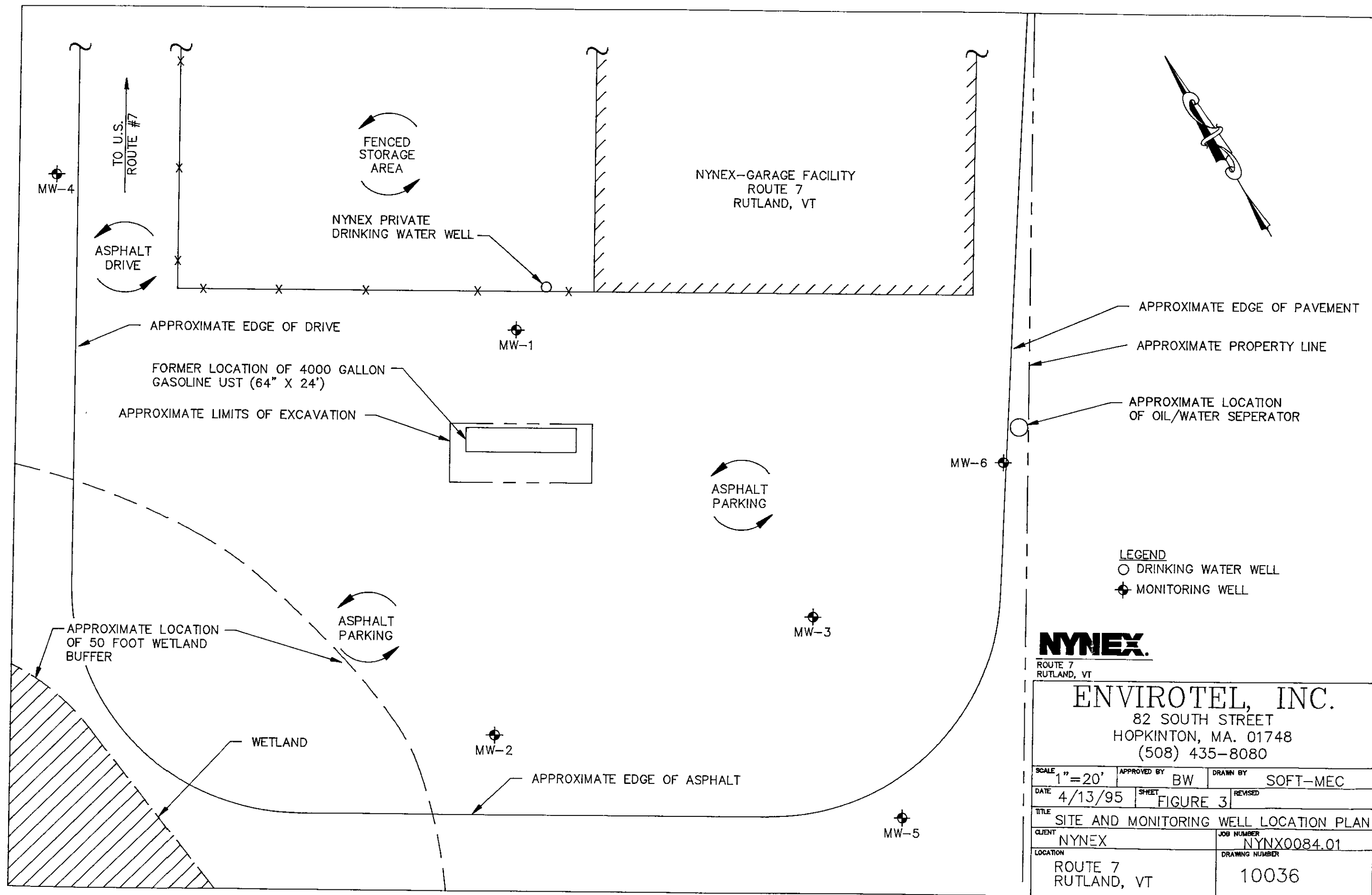
Compounds	Standard* (µg/L)	MW-1 (µg/L)	MW-1D (µg/L)	MW-2 (µg/L)	MW-3 (µg/L)	MW-4 (µg/L)	MW-5 (µg/L)	MW-6 (µg/L)
Methyl tert-Butyl Ether (MTBE)	40	BRL	6	BRL	130	BRL	140	NT
Benzene	5	59	52	3	980	BRL	300	6
Toluene	1,000 - RACC	140	2	1	1,400	BRL	280	3
Ethylbenzene	680 - VGES 700	2	2	BRL	55	BRL	8	3
Total Xylenes	400 - VGES 10,000	41	35	2	580	BRL	162	25
Total Petroleum Hydrocarbons (mg/L)	NA	NT	NT	NT	NT	NT	NT	36 mg/L

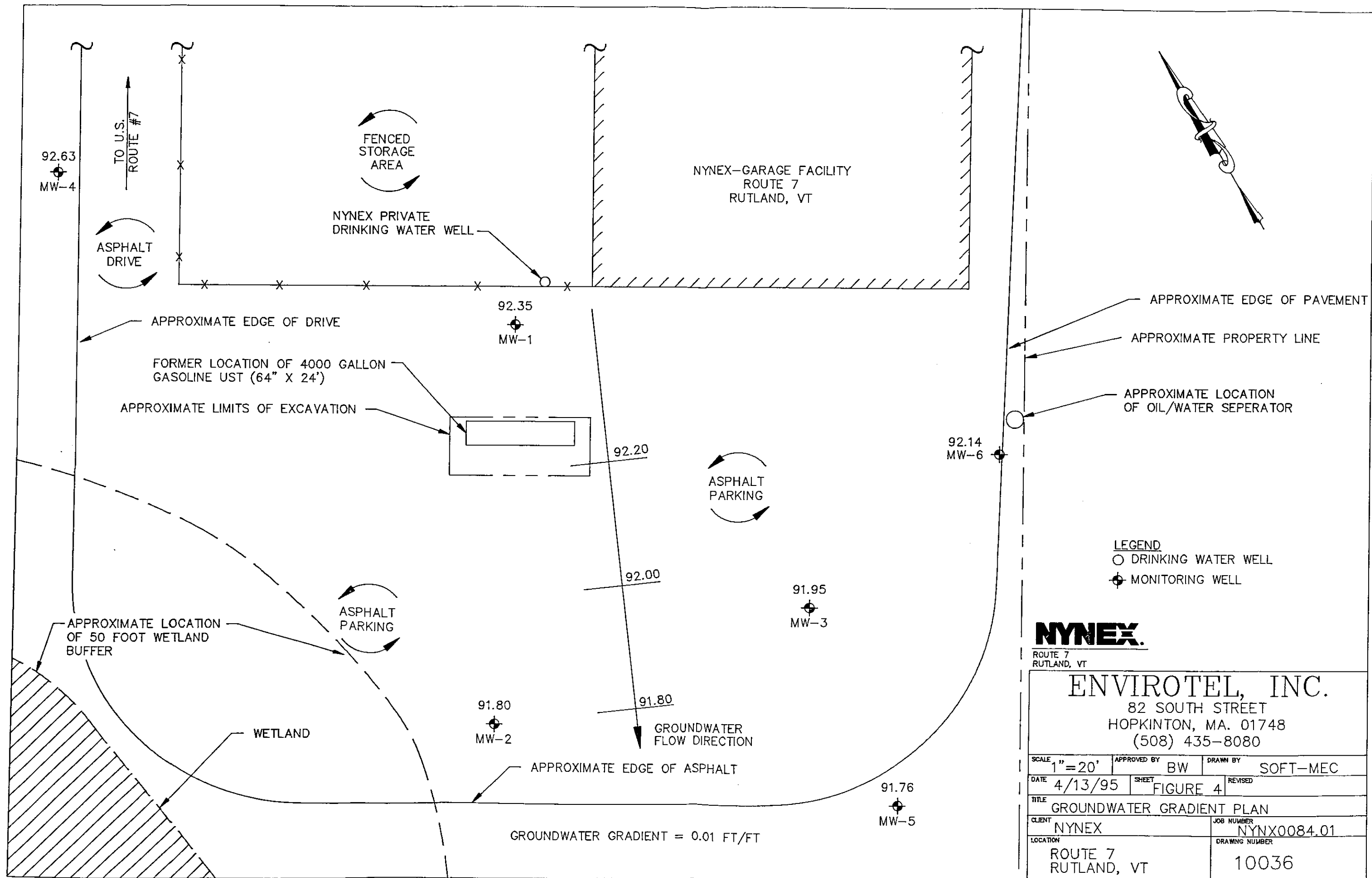
* VT DEC Groundwater Standard
 NA VT DEC does not have specific standards for TPH concentrations in groundwater
 BRL Below Reportable Limit.
 NT Compound Not Analyzed For

Figure 1: TOPOGRAPHIC SITE MAP









APPENDIX A

**SOIL BORING LOGS AND MONITORING WELL
CONSTRUCTION DETAILS**

TEST BORING LOG
BORING NO. MW 1

SHEET NO. 1 OF 1

JOB NO.	NYNX0084.01
---------	-------------

ELEVATION

DATE STARTED	1/23/95
--------------	---------

DATE FINISHED	1/23/95
---------------	---------

DRILLER FRANK HARRINGTON

INSPECTOR B WILCOX

SAMPLE

DEPTH
(FEET)

REC. (FT.)	BLOWS PER 0.5 FOOT
------------	-----------------------

CLASSIFICATION

HNU

Concrete

Bentonite = Pure
Gold Medium Chip

Riser: 2" PVC

Screen: 2" PVC
with 0.010" slots

Filter Sand = New
England Silica
#2 Filter Sand

Silt Trap

- 15

-20

-25

ENVIROTEL, INC.

TEST BORING LOG
BORING NO. MW 2

PROJECT: NYNEX GARAGE ROUTE 7 RUTLAND, VT

CLIENT: NYNEX

BORING CONTRACTOR: SEABOARD ENVIROMENTAL DRILLING

SHEET NO. 1 OF 1

JOB NO. NYNX0084.01

ROUNDWATER:

ELEVATION

DATE	TIME	WATER ELEVATION	REFERENCE	TYPE	CAS. HSA	SAMPLE S.S.	CORE	TUBE	DATE STARTED	1/23/95
1/24/95	8:55	7.56	TOR	DIA.	4.25"	2"			DATE FINISHED	1/23/95
				WT.		140 LB.			DRILLER FRANK	HARRINGTON
				FALL		30"			INSPECTOR	B WILCOX

WELL CONSTRUCTION

ush mounted
anhole cover

Concrete

Filter Sand

Bentonite = Pure
Gold Medium Chip

Riser: 2" PVC

Screen: 2" PVC
with 0.010" slots

Filter Sand = New
England Silica
#2 Filter Sand

Silt Trap

[illegible]

ENVIROTEL, INC.

TEST BORING LOG
BORING NO. MW 3

PROJECT: NYNEX GARAGE ROUTE 7 RUTLAND, VT

CLIENT: NYNEX

DRIING CONTRACTOR: SEABOARD ENVIROMENTAL DRILLING

GROUNDWATER:

DATE	TIME	WATER ELEVATION	REFERENCE	TYPE	CAS.	SAMPLE	CORE	TUBE	ELEVATION
1/24/95	9:05	7.73	TOR	DIA.	4.25"	2"			DATE STARTED 1/23/95
				WT.		140 LB.			DATE FINISHED 1/23/95
				FALL		30"			DRILLER FRANK HARRINGTON
									INSPECTOR B WILCOX

WELL CONSTRUCTION

ash mounted
anhole cover

Concrete

Filter Sand

Bentonite = Pure
Gold Medium Chip

Riser: 2" PVC

Screen: 2" PVC
with 0.010" slots

Filter Sand = New
England Silica
#2 Filter Sand

Silt Trap

DEPTH
(FEET)

SAMPLE

NO. REC. BLOWS PER
(FT.) 0.5 FOOT

CLASSIFICATION

HNU

Brown, medium to fine SAND, little Gravel, Dry

10

3.0

Brown, medium to fine SAND, little Silt, trace Gravel,
Moist, collect Sample B-3

80

5.0

Brown, coarse to fine SAND, some Gravel, trace
Silt, Moist

35

7.0

8.0

approx. 9.0' BGS

Brown, coarse to fine SAND, little Gravel, trace Silt,
Saturated

20

10.0

Brown, coarse to fine SAND, little Gravel, trace Silt,
Saturated

20

12.0

15.0

Brown, medium to fine SAND, trace Silt, trace Gravel,
Saturated

12

17.0

25'

ENVIROTEL, INC.

TEST BORING LOG
BORING NO. MW 4

PROJECT: NYNEX GARAGE ROUTE 7 RUTLAND, VT

CLIENT: NYNEX

BORING CONTRACTOR: SEABOARD ENVIRONMENTAL DRILLING

SHEET NO. 1 OF 1

JOB NO. NYN0084.01

GROUNDWATER:

ELEVATION

DATE	TIME	WATER ELEVATION	REFERENCE	TYPE	CAS. HSA	SAMPLE S.S.	CORE	TUBE	DATE STARTED	1/24/95
				DIA.	4.25"	2"			DATE FINISHED	1/24/95
				WT.		140 LB.			DRILLER FRANK HARRINGTON	
				FALL		30"			INSPECTOR B WILCOX	

WELL CONSTRUCTION

Flush mounted
casing cover

Concrete

Filter Sand

Bentonite = Pure
Gold Medium Chip

Riser: 2" PVC

Screen: 2" PVC
with 0.010" slots

Filter Sand = New
England Silica
#2 Filter Sand

Well Point

DEPTH
(FEET)

SAMPLE

NO. REC. (FT.) BLOWS PER
0.5 FOOT

CLASSIFICATION

HNU

0'

1.0

2.0

3.0

4.0

5.0

6.0

7.0

8.0

9.0

10.0

11.0

12.0

13.0

14.0

15.0

16.0

17.0

18.0

19.0

20.0

21.0

22.0

23.0

24.0

25.0

26.0

27.0

28.0

29.0

30.0

31.0

32.0

33.0

34.0

35.0

36.0

37.0

38.0

39.0

40.0

41.0

42.0

43.0

44.0

45.0

46.0

47.0

48.0

49.0

50.0

51.0

52.0

53.0

54.0

55.0

S-1

0.8'

4

7

8

12

S-2

1.1'

31

31

28

34

S-3

0.6'

12

11

12

16

Brown, medium to fine SAND, trace Gravel, Dry

Brown, coarse to fine SAND, little Gravel, trace Silt,
Wet, collect Sample B-4

▼ approx. 8.0' BGS

Brown, coarse to fine SAND, little Gravel, trace Silt,
Saturated

Auger Refuse

Suspected Bedrock Surface

ENVIROTEL, INC.

TEST BORING LOG
BORING NO. MW 5

OBJECT: NYNEX GARAGE ROUTE 7 RUTLAND, VT

CLIENT: NYNEX

BORING CONTRACTOR: SEABOARD ENVIROMENTAL DRILLING

SHEET NO. 1 OF 1

JOB NO. NYNX0084.0

GROUNDWATER:

DATE	TIME	WATER ELEVATION	REFERENCE	TYPE	CAS.	SAMPLE	CORE	TUBE	DATE STARTED	1/24/95
				DIA.	4.25"	S.S.	2"		DATE FINISHED	1/24/95
				WT.		140 LB.			DRILLER FRANK	HARRINGTON
				FALL		30"			INSPECTOR	B WILCOX

WELL CONSTRUCTION

ash mounted
in-hole cover

Concrete

Filter Sand

Bentonite = Pure
Gold Medium Chip

Riser: 2" PVC

Screen: 2" PVC
with 0.010" slots

Filter Sand = New
England Silica
#2 Filter Sand

Silt Trap

DEPTH
(FEET)

SAMPLE

NO.

REC.
(FT.)

BLOWS PER
0.5 FOOT

CLASSIFICATION

HNU

0'

S-1

1.3'

4

4

4

4

Auger

1.0

Brown, coarse to fine SAND, little Gravel, trace Silt

0.0

3.0

5'

S-2

1.4'

6

12

14

18

Brown, coarse to fine SAND, little Gravel, trace Silt
Moist

0.0

5.0

7.0

▼ approx. 8.0' BGS

8.0

Drive split-spoon through Cobble Zone, Saturated

0.0

10.0

10'

S-3

0.4'

19

38

57

79

COBBLES and GRAVEL, Saturated

0.0

12.0

S-4

0.4'

19

20

34

17

15'

S-5

0.4'

5

4

4

4

Brown, coarse to fine SAND, some Gravel, Saturated

0.0

17.0

Note: Collect Soil Sample B-5 from Auger Flights
Approx. 7-9' BGS

20'

25'

ENVIROTEL, INC.

TEST BORING LOG
BORING NO. MW 6

PROJECT: NYNEX GARAGE ROUTE 7 RUTLAND, VT

SHEET NO. 1 OF 1

CLIENT: NYNEX

JOB NO. NYNX0084.0

DRILLING CONTRACTOR: SEABOARD ENVIROMENTAL DRILLING

ELEVATION

ROUNDWATER:

ROUNDWATER:				CAS.		SAMPLE	CORE	TUBE	ELEVATION	
DATE	TIME	WATER	ELEVATION	REFERENCE	TYPE	HSA	S.S.		DATE STARTED	1/24/95
					DIA.	4.25"	2"		DATE FINISHED	1/24/95
					WT.		140 LB.		DRILLER FRANK	HARRINGTON
					FALL		30"		INSPECTOR	B WILCOX

WELL CONSTRUCTION

luch mounted
panhole cover

Concrete

Filter Sand

Bentonite = Pure
Gold Medium Chip

Riser: 2" PVC

Screen: 2" PVC
with 0.010" slots

Filter Sand = New
England Silica
#2 Filter Sand

Silt Trap

[illegible]

APPENDIX B
LABORATORY REPORTS

GROUNDWATER ANALYTICAL

Groundwater Analytical, Inc.
228 Main Street
Buzzards Bay, MA 02532
Telephone (508) 759-4441
FAX (508) 759-4475

April 4, 1995

Mr. William Wilcox
EnviroTEL, Inc.
82 South Street
Hopkinton, MA 01748

Dear Bill:

Enclosed are the Volatile Organics and Hydrocarbon Fingerprint Analyses performed for the NYNEX Rutland VT project, number NYNX 0084.01, sampled on 03-18-95. This project was processed for Standard Two Week turnaround.

A brief description of the Quality Assurance/Quality Control procedures employed by Groundwater Analytical, and a statement of our state certifications are contained within the report. This letter authorizes the release of the analytical results and should be considered a part of this report.

Should you have any questions concerning this report, please do not hesitate to contact me.

Sincerely,



Jonathan R. Sanford
Vice President

JRS/adw
Enclosures

GROUNDWATER ANALYTICAL

EPA METHOD 602 Volatile Aromatics (GC/PID)

Field ID: MW-1
Project: NYNEX Rutland VT/NYNX 0084.01
Client: EnviroTEL
Cont/Prsv: 40mL VOA Vial/HCl Cool
Matrix: Aqueous

Lab ID: 10236-01
Batch ID: VG2-0585-W
Sampled: 03-18-95
Received: 03-21-95
Analyzed: 03-31-95

PARAMETER	CONCENTRATION (ug/L)	REPORTING LIMIT (ug/L)
Methyl tert-Butyl Ether *	BRL	10
Benzene	59	2
Toluene	140	2
Chlorobenzene	BRL	2
Ethylbenzene	2	2
meta-and para-Xylene *	23	2
ortho-Xylene *	18	2
1,3-Dichlorobenzene	BRL	2
1,4-Dichlorobenzene	BRL	2
1,2-Dichlorobenzene	BRL	2
QC SURROGATE COMPOUND	SPIKED	MEASURED
a,a,a-Trifluorotoluene	30	30
		RECOVERY
		102 %
		QC LIMITS
		87 - 113 %

Elevated reporting limit due to required sample dilution. BRL = Below Reporting Limit. * Non-target compound. Method Reference: Method 602 - Purgeable Aromatics, 40 C.F.R. 136, Appendix A (1986).

GROUNDWATER ANALYTICAL

EPA METHOD 602
Volatile Aromatics (GC/PID)

Field ID: MW-2
Project: NYNEX Rutland VT/NYNX 0084.01
Client: EnviroTEL
Cont/Prsv: 40mL VOA Vial/HCl Cool
Matrix: Aqueous

Lab ID: 10236-02
Batch ID: VG2-0587-W
Sampled: 03-18-95
Received: 03-21-95
Analyzed: 04-02-95

PARAMETER	CONCENTRATION (ug/L)	REPORTING LIMIT (ug/L)
Methyl <i>tert</i> -Butyl Ether *	BRL	5
Benzene	3	1
Toluene	1	1
Chlorobenzene	BRL	1
Ethylbenzene	BRL	1
<i>meta</i> -and <i>para</i> -Xylene *	1	1
<i>ortho</i> -Xylene *	1	1
1,3-Dichlorobenzene	BRL	1
1,4-Dichlorobenzene	BRL	1
1,2-Dichlorobenzene	BRL	1

QC SURROGATE COMPOUND	SPIKED	MEASURED	RECOVERY	QC LIMITS
a,a,a-Trifluorotoluene	30	30	101 %	87 - 113 %

BRL = Below Reporting Limit. * Non-target compound. Method Reference: Method 602 - Purgeable Aromatics, 40 C.F.R. 136, Appendix A (1986).

GROUNDWATER ANALYTICAL

EPA METHOD 602
Volatile Aromatics (GC/PID)

Field ID: MW-1D
Project: NYNEX Rutland VT/NYNX 0084.01
Client: EnviroTEL
Cont/Prsv: 40mL VOA Vial/HCl Cool
Matrix: Aqueous

Lab ID: 10236-03
Batch ID: VG2-0587-W
Sampled: 03-18-95
Received: 03-21-95
Analyzed: 04-02-95

PARAMETER	CONCENTRATION (ug/L)	REPORTING LIMIT (ug/L)
Methyl tert-Butyl Ether *	6	5
Benzene	52	1
Toluene	2	1
Chlorobenzene	BRL	1
Ethylbenzene	2	1
meta-and para-Xylene *	20	1
ortho-Xylene *	15	1
1,3-Dichlorobenzene	BRL	1
1,4-Dichlorobenzene	BRL	1
1,2-Dichlorobenzene	BRL	1
QC SURROGATE COMPOUND	SPIKED	MEASURED
a,a,a-Trifluorotoluene	30	33
		RECOVERY
		109 %
		QC LIMITS
		87 - 113 %

BRL = Below Reporting Limit. * Non-target compound. Method Reference: Method 602 - Purgeable Aromatics, 40 C.F.R. 136, Appendix A (1986).

GROUNDWATER ANALYTICAL

EPA METHOD 602 Volatile Aromatics (GC/PID)

Field ID: MW-3
Project: NYNEX Rutland VT/NYNX 0084.01
Client: EnviroTEL
Cont/Prsv: 40mL VOA Vial/HCl Cool
Matrix: Aqueous

Lab ID: 10236-04
Batch ID: VG2-0585-W
Sampled: 03-18-95
Received: 03-21-95
Analyzed: 04-01-95

PARAMETER	CONCENTRATION (ug/L)	REPORTING LIMIT (ug/L)
Methyl <i>tert</i> -Butyl Ether *	130	125
Benzene	980	25
Toluene	1,400	25
Chlorobenzene	BRL	25
Ethylbenzene	55	25
<i>meta</i> -and <i>para</i> -Xylene *	390	25
<i>ortho</i> -Xylene *	190	25
1,3-Dichlorobenzene	BRL	25
1,4-Dichlorobenzene	BRL	25
1,2-Dichlorobenzene	BRL	25
QC SURROGATE COMPOUND	SPIKED	MEASURED
a,a,a-Trifluorotoluene	30	29
		RECOVERY
		98 %
		QC LIMITS
		87 - 113 %

Elevated reporting limit due to required sample dilution. BRL = Below Reporting Limit. * Non-target compound. Method Reference: Method 602 - Purgeable Aromatics, 40 C.F.R. 136, Appendix A (1986).

GROUNDWATER ANALYTICAL

EPA METHOD 602
Volatile Aromatics (GC/PID)

Field ID: MW-4
Project: NYNEX Rutland VT/NYNX 0084.01
Client: EnviroTEL
Cont/Prsv: 40mL VOA Vial/HCl Cool
Matrix: Aqueous

Lab ID: 10236-05
Batch ID: VG2-0586-W
Sampled: 03-18-95
Received: 03-21-95
Analyzed: 04-01-95

PARAMETER	CONCENTRATION (ug/L)	REPORTING LIMIT (ug/L)
Methyl tert-Butyl Ether *	BRL	5
Benzene	BRL	1
Toluene	BRL	1
Chlorobenzene	BRL	1
Ethylbenzene	BRL	1
meta-and para-Xylene *	BRL	1
ortho-Xylene *	BRL	1
1,3-Dichlorobenzene	BRL	1
1,4-Dichlorobenzene	BRL	1
1,2-Dichlorobenzene	BRL	1
QC SURROGATE COMPOUND	SPIKED	MEASURED
a,a,a-Trifluorotoluene	30	30
		RECOVERY
		101 %
		QC LIMITS
		87 - 113 %

BRL = Below Reporting Limit. * Non-target compound. Method Reference: Method 602 - Purgeable Aromatics, 40 C.F.R. 136, Appendix A (1986).

GROUNDWATER ANALYTICAL

EPA METHOD 602 Volatile Aromatics (GC/PID)

Field ID: MW-5
Project: NYNEX Rutland VT/NYNX 0084.01
Client: EnviroTEL
Cont/Prsv: 40mL VOA Vial/HCl Cool
Matrix: Aqueous

Lab ID: 10236-06
Batch ID: VG2-0585-W
Sampled: 03-18-95
Received: 03-21-95
Analyzed: 04-01-95

PARAMETER	CONCENTRATION (ug/L)	REPORTING LIMIT (ug/L)
Methyl <i>tert</i> -Butyl Ether *	140	50
Benzene	300	10
Toluene	280	10
Chlorobenzene	BRL	10
Ethylbenzene	8 j	10
<i>meta</i> -and <i>para</i> -Xylene *	100	10
<i>ortho</i> -Xylene *	62	10
1,3-Dichlorobenzene	BRL	10
1,4-Dichlorobenzene	BRL	10
1,2-Dichlorobenzene	BRL	10
QC SURROGATE COMPOUND	SPIKED	MEASURED
a,a,a-Trifluorotoluene	30	30
		RECOVERY
		100 %
		QC LIMITS
		87 - 113 %

j = Analyte detected below the reporting limit. Analyte result is an estimate. Elevated reporting limit due to required sample dilution. BRL = Below Reporting Limit. * Non-target compound. Method Reference: Method 602 - Purgeable Aromatics, 40 C.F.R. 136, Appendix A (1986).

GROUNDWATER ANALYTICAL

EPA METHOD 8260/TCL
Volatile Organics (GC/MS)

Field ID: MW-6
Project: NYNEX Rutland VT/NYNX 0084.01
Client: EnviroTEL
Cont/Prsv: 40mL VOA Vial/HCl Cool
Matrix: Aqueous

Lab ID: 10236-07
Batch ID: VM2-0987-W
Sampled: 03-18-95
Received: 03-21-95
Analyzed: 03-28-95

PARAMETER	CONCENTRATION (ug/L)	REPORTING LIMIT (ug/L)
Chloromethane	BRL	0.5
Vinyl Chloride	BRL	0.5
Bromomethane	BRL	0.5
Chloroethane	BRL	0.5
1,1-Dichloroethene	BRL	0.5
Acetone	45 e	5.0
Carbon Disulfide	BRL	0.5
Methylene Chloride	BRL	0.5
<i>trans</i> -1,2-Dichloroethene	BRL	0.5
1,1-Dichloroethane	BRL	0.5
<i>cis</i> -1,2-Dichloroethene	BRL	0.5
2-Butanone	BRL	5.0
Chloroform	BRL	0.5
1,1,1-Trichloroethane	BRL	0.5
Carbon Tetrachloride	BRL	0.5
Benzene	6	0.5
1,2-Dichloroethane	BRL	0.5
Trichloroethene	BRL	0.5
1,2-Dichloropropane	BRL	0.5
Bromodichloromethane	BRL	0.5
<i>cis</i> -1,3-Dichloropropene	BRL	0.5
4-Methyl-2-Pentanone	BRL	5.0
Toluene	3	0.5
<i>trans</i> -1,3-Dichloropropene	BRL	0.5
1,1,2-Trichloroethane	BRL	0.5
Tetrachloroethene	BRL	0.5
2-Hexanone	BRL	5.0
Dibromochloromethane	BRL	0.5
Chlorobenzene	BRL	0.5
Ethylbenzene	3	0.5
<i>meta</i> -and <i>para</i> -Xylene	2	0.5
<i>ortho</i> -Xylene	23	0.5
Styrene	BRL	0.5
Bromoform	BRL	0.5
1,1,2,2-Tetrachloroethane	BRL	0.5

QC SURROGATE COMPOUNDS	SPIKED	MEASURED	RECOVERY	QC LIMITS
Dibromofluoromethane	10	10	104 %	86 - 118 %
Toluene-d8	10	10	102 %	88 - 110 %
4-Bromofluorobenzene	10	11	107 %	86 - 115 %

e = Analyte response exceeded calibration range. Analyte result is an estimate. Analyte response was not attenuated to maintain maximum detectability of other target analytes. Reduced reporting limit achieved by using 25mL purge volume. BRL = Below Reporting Limit. Method Reference: Method 8260 - Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry: Capillary Column Technique, Test Methods for Evaluating Solid Waste, US EPA SW-846, Third Edition (Revised 1992). Parameter list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program.

GROUNDWATER ANALYTICAL

ASTM METHOD D3328-78 (Modified)
Hydrocarbon Fingerprinting (GC/FID)

Field ID: MW-6
Project: NYNEX Rutland VT/NYNX 0084.01
Client: EnviroTEL
Cont/Prsv: 1L Glass/H2SO4 Cool
Matrix: Aqueous

Lab ID: 10236-08
Batch ID: HF-0421-F
Sampled: 03-18-95
Preserved: 03-22-95
Received: 03-21-95
Extracted: 03-24-95
Analyzed: 03-30-95

Qualitative Identification

This sample has GC/FID characteristics that are similar to petroleum products in the n-C 9 to n-C 22 range and a Lubricating Oil in the n-C 22 to n-C 34 range.

Quantification

PARAMETER	CONCENTRATION (mg/L)		REPORTING LIMIT (mg/L)	
Total Petroleum Hydrocarbons	36		2.5	
QC SURROGATE COMPOUND	SPIKED	MEASURED	RECOVERY	QC LIMITS
o-Terphenyl	0.040	d	N/A	60 - 140 %

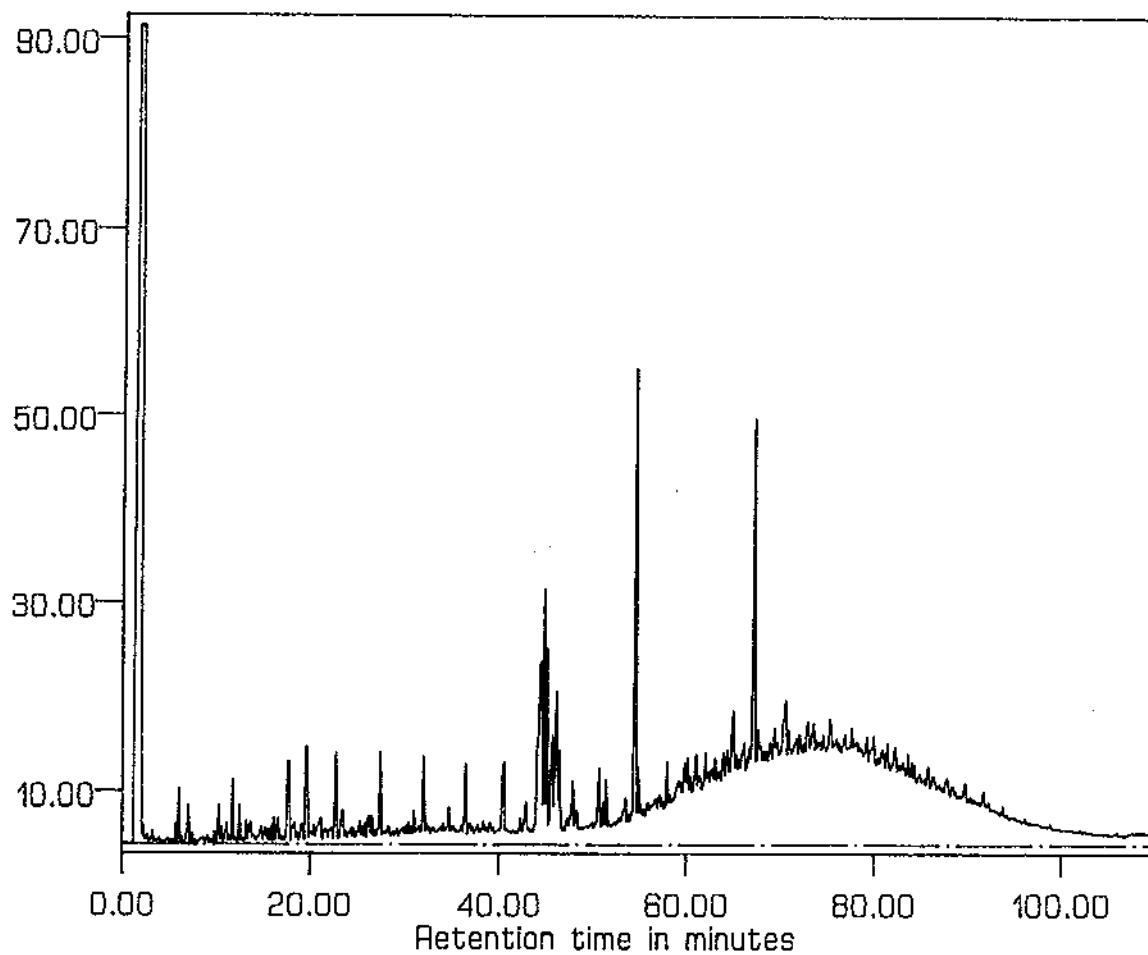
d = Surrogate recovery outside recommended limits due to required sample dilution. Elevated reporting limit due to required sample dilution. BRL = Below Reporting Limit. Method Reference: Method D3328-78 (Modified) - Comparison of Waterborne Petroleum Oils by Gas Chromatography, Volume 11.02 Water, American Society for Testing and Materials, Reapproved (1982).

**GROUNDWATER
ANALYTICAL**

ASTM METHOD D3328-78 (Modified)
Hydrocarbon Fingerprinting (GC/FID)

Lab ID: 10236-08 1/5

HYDROCARBONS LABORATORY



GROUNDWATER ANALYTICAL

QUALITY ASSURANCE Project Narrative

Project: NYNEX Rutland VT/NYNX 0084.01
Client: EnviroTEL

Lab ID: 10236
Received: 03-21-95

A. Physical Condition of Sample(s)

This project was received by the laboratory in satisfactory condition. The sample(s) were received undamaged in appropriate containers with the correct preservation.

B. Project Documentation

This project was accompanied by Chain of Custody documentation, with the following amendments or corrections:

1. Samples 10236-01 through -06 were analyzed by EPA Method 602 per Bill Wilcox, 03-22-95.

C. Analysis of Sample(s)

No analytical anomalies or non-conformances were noted by the laboratory during the processing of these samples. All data contained within this report is released without qualification.

GROUNDWATER ANALYTICAL

QUALITY ASSURANCE QA/QC Program Statement

Groundwater Analytical conducts an active Quality Assurance program to ensure the production of high quality, valid data. This program closely follows the guidance provided by *Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans*, US EPA QAMS-005/80 (1980), and *Test Methods for Evaluating Solid Waste*, US EPA SW-846, Third Edition (Revised 1992).

Quality Control protocols include Standard Operating Procedures (SOPs) developed for each analytical method. SOPs are derived from US EPA methodologies and other established references. Equipment and facility maintenance conform to Good Laboratory Practices (GLPs). Standards are prepared from commercially obtained reference materials of certified purity, and documented for traceability.

Quality Assessment protocols for most organic analyses include a minimum of one calibration standard, one method blank, one laboratory control sample, and one matrix spike and one sample duplicate for each sample batch. All samples, standards, blanks, laboratory control samples and matrix spikes are spiked with internal standards and surrogate compounds. GC/MS systems are tuned to BFB ion abundance criteria daily, or for each 12 hour operating period, whichever is more frequent.

Quality Assessment protocols for most inorganic analyses include a minimum of one calibration standard, one method blank, one laboratory control sample, one matrix spike and one sample duplicate for each sample batch. Standard curves are derived from one reagent blank and four concentration levels. Curve validity is verified by standard recoveries within plus or minus ten percent of the curve.

Batches are used as the basic unit for Quality Assessment. A Batch is defined as twenty or fewer samples which are analyzed together with the same method sequence and the same lots of reagents and with the same manipulations common to each sample within the same continuum of time within a 24 hour period.

Method Blanks are used to assess the level of contamination present in the analytical system. Method Blanks consist of reagent water or an aliquot of sodium sulfate. Method Blanks are taken through all the appropriate steps of an analytical method. Sample data reported is not corrected for blank contamination.

Laboratory Control Samples are used to assess the accuracy of the analytical method. A Laboratory Control Sample consists of reagent water or sodium sulfate spiked with a group of target compounds representative of the method analytes. Accuracy is defined as the degree of agreement of a measured value with the true or expected value. Percent Recoveries for the Laboratory Control Sample are calculated to assess accuracy.

Surrogate Compounds are used to assess the effectiveness of the method in dealing with each sample matrix. Surrogate Compounds are organic compounds which are similar to organic analytes of interest in chemical behavior, but which are not normally found in environmental samples. Percent Recoveries are calculated for each Surrogate Compound.

GROUNDWATER ANALYTICAL

QUALITY ASSURANCE Laboratory Control Sample Recovery

Category: EPA Method 602
Batch ID: VG2-0586-WL
Matrix: Aqueous
Units: ug/L

Laboratory Control Sample

ANALYTE	SPIKE ADDED	SPIKED RESULT	PERCENT RECOVERY	QC LIMITS
Benzene	50	54	108 %	76-127
Toluene	50	54	108 %	76-125
Chlorobenzene	50	55	110 %	75-130

All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

GROUNDWATER ANALYTICAL

QUALITY ASSURANCE Method Blank

Category: EPA Method 602
Batch ID: VG2-0586-WB1
Matrix: Aqueous

PARAMETER	CONCENTRATION (ug/L)		REPORTING LIMIT (ug/L)	
Methyl <i>tert</i> -Butyl Ether *	BRL		5	
Benzene	BRL		1	
Toluene	BRL		1	
Chlorobenzene	BRL		1	
Ethylbenzene	BRL		1	
<i>meta</i> -and <i>para</i> -Xylene *	BRL		1	
<i>ortho</i> -Xylene *	BRL		1	
1,3-Dichlorobenzene	BRL		1	
1,4-Dichlorobenzene	BRL		1	
1,2-Dichlorobenzene	BRL		1	
QC SURROGATE COMPOUND	SPIKED	MEASURED	RECOVERY	QC LIMITS
a,a,a-Trifluorotoluene	30	30	101 %	87 - 113 %

BRL = Below Reporting Limit. * Non-target compound. Method Reference: Method 602 - Purgeable Aromatics, 40 C.F.R. 136, Appendix A (1986).

GROUNDWATER ANALYTICAL

QUALITY ASSURANCE Laboratory Control Sample Recovery

Category: EPA Method 602
Batch ID: VG2-0587-WL
Matrix: Aqueous
Units: ug/L

Laboratory Control Sample

ANALYTE	SPIKE ADDED	SPIKED RESULT	PERCENT RECOVERY	QC LIMITS
Benzene	50	55	109 %	76-127
Toluene	50	55	110 %	76-125
Chlorobenzene	50	52	105 %	75-130

All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

GROUNDWATER ANALYTICAL

QUALITY ASSURANCE Method Blank

Category: EPA Method 602
Batch ID: VG2-0587-WB1
Matrix: Aqueous

PARAMETER	CONCENTRATION (ug/L)	REPORTING LIMIT (ug/L)
Methyl <i>tert</i> -Butyl Ether *	BRL	5
Benzene	BRL	1
Toluene	BRL	1
Chlorobenzene	BRL	1
Ethylbenzene	BRL	1
<i>meta</i> -and <i>para</i> -Xylene *	BRL	1
<i>ortho</i> -Xylene *	BRL	1
1,3-Dichlorobenzene	BRL	1
1,4-Dichlorobenzene	BRL	1
1,2-Dichlorobenzene	BRL	1
QC SURROGATE COMPOUND	SPIKED	MEASURED
a,a,a-Trifluorotoluene	30	30
		RECOVERY
		101 %
		QC LIMITS
		87 - 113 %

BRL = Below Reporting Limit. * Non-target compound. Method Reference: Method 602 - Purgeable Aromatics, 40 C.F.R. 136, Appendix A (1986).

GROUNDWATER ANALYTICAL

QUALITY ASSURANCE Laboratory Control Sample Recovery

Category: EPA Method 8260
Batch ID: VM2-0987-WL
Matrix: Aqueous
Units: ug/L

Laboratory Control Sample

ANALYTE	SPIKE ADDED	SPIKED RESULT	PERCENT RECOVERY	QC LIMITS
1,1 Dichloroethene	10	13	130 %	61-145
Benzene	10	12	120 %	76-127
Trichloroethene	10	12	119 %	71-120
Toluene	10	11	115 %	76-125
Chlorobenzene	10	10	104 %	75-130

All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

GROUNDWATER ANALYTICAL

QUALITY ASSURANCE Method Blank

Category: EPA Method 8260/TCL
Batch ID: VM2-0987-WB1
Matrix: Aqueous

PARAMETER	CONCENTRATION (ug/L)	REPORTING LIMIT (ug/L)
Chloromethane	BRL	0.5
Vinyl Chloride	BRL	0.5
Bromomethane	BRL	0.5
Chloroethane	BRL	0.5
1,1-Dichloroethene	BRL	0.5
Acetone	BRL	5.0
Carbon Disulfide	BRL	0.5
Methylene Chloride	BRL	0.5
<i>trans</i> -1,2-Dichloroethene	BRL	0.5
Methyl <i>tert</i> -butyl Ether *	BRL	0.5
1,1-Dichloroethane	BRL	0.5
<i>cis</i> -1,2-Dichloroethene	BRL	0.5
2-Butanone	BRL	5.0
Chloroform	BRL	0.5
1,1,1-Trichloroethane	BRL	0.5
Carbon Tetrachloride	BRL	0.5
Benzene	BRL	0.5
1,2-Dichloroethane	BRL	0.5
Trichloroethene	BRL	0.5
1,2-Dichloropropane	BRL	0.5
Bromodichloromethane	BRL	0.5
<i>cis</i> -1,3-Dichloropropene	BRL	0.5
4-Methyl-2-Pentanone	BRL	5.0
Toluene	BRL	0.5
<i>trans</i> -1,3-Dichloropropene	BRL	0.5
1,1,2-Trichloroethane	BRL	0.5
Tetrachloroethene	BRL	0.5
2-Hexanone	BRL	5.0
Dibromochloromethane	BRL	0.5
Chlorobenzene	BRL	0.5
Ethylbenzene	BRL	0.5
<i>meta</i> -and <i>para</i> -Xylene	BRL	0.5
<i>ortho</i> -Xylene	BRL	0.5
Styrene	BRL	0.5
Bromoform	BRL	0.5
1,1,2,2-Tetrachloroethane	BRL	0.5
QC SURROGATE COMPOUNDS	SPIKED	MEASURED
Dibromofluoromethane	10	10
Toluene-d8	10	10
4-Bromofluorobenzene	10	10
	RECOVERY	QC LIMITS
	104 %	86 - 118 %
	101 %	88 - 110 %
	99 %	86 - 115 %

Reduced reporting limit achieved by using 25mL purge volume. BRL = Below Reporting Limit. Method Reference: Method 8260 - Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry: Capillary Column Technique, Test Methods for Evaluating Solid Waste, US EPA SW-846, Third Edition (Revised 1992). Parameter list as specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program.

GROUNDWATER ANALYTICAL

QUALITY ASSURANCE Laboratory Control Sample Recovery

Category: EPA Method 602
Batch ID: VG2-0585-WL
Matrix: Aqueous
Units: ug/L

Laboratory Control Sample

ANALYTE	SPIKE ADDED	SPIKED RESULT	PERCENT RECOVERY	QC LIMITS
Benzene	50	52	105 %	76-127
Toluene	50	53	106 %	76-125
Chlorobenzene	50	51	102 %	75-130

All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

GROUNDWATER ANALYTICAL

QUALITY ASSURANCE Method Blank

Category: EPA Method 602
Batch ID: VG2-0585-WB1
Matrix: Aqueous

PARAMETER	CONCENTRATION (ug/L)		REPORTING LIMIT (ug/L)	
Methyl tert-Butyl Ether *		BRL		5
Benzene		BRL		1
Toluene		BRL		1
Chlorobenzene		BRL		1
Ethylbenzene		BRL		1
meta-and para-Xylene *		BRL		1
ortho-Xylene *		BRL		1
1,3-Dichlorobenzene		BRL		1
1,4-Dichlorobenzene		BRL		1
1,2-Dichlorobenzene		BRL		1
QC SURROGATE COMPOUND	SPIKED	MEASURED	RECOVERY	QC LIMITS
a,a,a-Trifluorotoluene	30	30	101 %	87 - 113 %

BRL = Below Reporting Limit. * Non-target compound. Method Reference: Method 602 - Purgeable Aromatics, 40 C.F.R. 136, Appendix A (1986).

**GROUNDWATER
ANALYTICAL**

**QUALITY ASSURANCE
Laboratory Control Sample Recovery**

Category: ASTM Method D3328-78 (Modified)
Batch ID: HF-0421-FL
Matrix: Aqueous
Units: mg/L

Laboratory Control Sample

ANALYTE	SPIKE ADDED	SPIKED RESULT	PERCENT RECOVERY	QC LIMITS
Fuel Oil No. 2	2.0	1.5	76 %	60-140

All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

GROUNDWATER ANALYTICAL

QUALITY ASSURANCE
Method Blank

Category: ASTM Method D3328-78 (Modified)
Batch ID: HF-0421-FB1
Matrix: Aqueous

PARAMETER	CONCENTRATION (mg/L)	REPORTING LIMIT (mg/L)
Total Petroleum Hydrocarbons	BRL	0.5

QC SURROGATE COMPOUND	SPIKED	MEASURED	RECOVERY	QC LIMITS
o-Terphenyl	0.040	0.030	74 %	60 - 140 %

BRL = Below Reporting Limit. Method Reference: Method D3328-78 (Modified) - Comparison of Waterborne Petroleum Oils by Gas Chromatography, Volume 11.02 Water, American Society for Testing and Materials, Reapproved (1982).

GROUNDWATER ANALYTICAL

QUALITY ASSURANCE State Certification

CONNECTICUT Department of Health Services

**Certificate Number
PH-0586**

Potable Water, Wastewater/Trade Waste, Sewage/Effluent, and Soil: Purgeable Halocarbons, Purgeable Aromatics, Pesticides, Phenols, Oil and Grease, Aluminum, Antimony, Arsenic, Beryllium, Cadmium, Chromium-T, Chromium-VI, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Tin, Vanadium, Zinc, Cyanide, TDS, Ammonia, TKN, Nitrate, Ortho-Phosphate, Alkalinity, Hardness, Chloride, Fluoride, pH, Conductivity

MAINE Department of Human Services

**Certificate Number
N/A**

Reciprocal certification in accordance with Massachusetts certification for drinking water parameters.

MASSACHUSETTS Department of Environmental Protection

**Certificate Number
MA103**

Potable Water: Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Selenium, Silver, Sodium, Thallium, Nitrate-N, Fluoride, Cyanide, Calcium, Total Alkalinity, Total Dissolved Solids, pH, Langelier Index, Trihalomethanes, Volatile Organic Compounds, 1,2-Dibromoethane, 1,2-Dibromo-3-chloropropane. Non-Potable Water: Aluminum, Antimony, Arsenic, Beryllium, Cadmium, Chromium, Cobalt, Copper, Iron, Lead, Manganese, Mercury, Molybdenum, Nickel, Selenium, Silver, Strontium, Thallium, Titanium, Vanadium, Zinc, pH, Specific Conductivity, Total Dissolved Solids, Total Hardness, Calcium, Magnesium, Sodium, Potassium, Total Alkalinity, Chloride, Fluoride, Ammonia-N, Nitrate-N, Kjeldahl-N, Orthophosphate, Total Cyanide, Oil and Grease, Total Phenolics, Volatile Halocarbons, Volatile Aromatics, Chlordane, Aldrin, Dieldrin, DDD, DDE, DDT, Heptachlor, Heptachlor Epoxide, Polychlorinated Biphenyls (Water), Polychlorinated Biphenyls (Oil).

MICHIGAN Department of Public Health

**Certificate Number
N/A**

Drinking Water: Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Cyanide, Fluoride, Lead, Mercury, Nickel, Nitrate, Nitrite, Selenium, Silver, Sodium, Sulfate, Thallium, Total Trihalomethanes, Regulated and Unregulated Volatile Organic Chemicals.

NEW HAMPSHIRE Department of Environmental Services

**Certificate Number
202791-A/B**

Drinking Water: Lead, Selenium, Silver, Thallium, Trihalomethanes, Volatile Organics, Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Mercury, Nickel, Fluoride, Total Filterable Residue, Calcium, Alkalinity, pH, Corrosivity, Total Cyanide, Vinyl Chloride, DBCP and EDB. Wastewater: Arsenic, Beryllium, Cadmium, Cobalt, Copper, Iron, Mercury, Manganese, Nickel, Lead, Selenium, Zinc, Antimony, Silver, Thallium, Molybdenum, Strontium, pH, Total Hardness, Calcium, Sodium, Potassium, Total Alkalinity, Chloride, Fluoride, Nitrate-N, TKN, Orthophosphates, Total Phenolics, Oil & Grease, PCBs in Oil, Pesticides, Volatile Organics, Titanium, Total Cyanide, PCBs in Water.

RHODE ISLAND Department of Health

**Certificate Number
A54**

Potable Water: Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Selenium, Silver, Thallium, Nitrate, Nitrite, Fluoride, Turbidity, Chlorine, Total Filterable Solids, Calcium, pH, Alkalinity, Sodium, Corrosivity, Sulfate, Cyanide, Trihalomethanes, Chlorinated Hydrocarbon Pesticides, PCBs, Herbicides, Volatile Organic Compounds (EPA 524.2 and 504) and PAHs. Non-potable and Waste Waters: Aluminum, Arsenic, Beryllium, Cadmium, Cobalt, Chromium, Copper, Iron, Mercury, Manganese, Nickel, Lead, Selenium, Vanadium, Zinc, Antimony, Silver, Thallium, Molybdenum, Strontium, Titanium, pH, Conductance, TDS, Hardness, Calcium, Magnesium, Sodium, Potassium, Alkalinity, Chloride, Fluoride, Sulfate, Ammonia, Nitrate, Orthophosphate, TKN, Total Phosphorous, Cyanide, Non-filterable solids, Oil and Grease, Total Phenolics, Chlorine, PCBs in Water, PCBs in Oil, Chlorinated Hydrocarbon Pesticides, Volatile Halocarbons, Volatile Aromatics, Acid Extractables and Base/Neutral Extractables.

GROUNDWATER ANALYTICAL

228 Main Street
Buzzards Bay, MA 02532
Telephone (508) 759-4441
FAX (508) 759-4475

CHAIN-OF-CUSTODY RECORD AND WORK ORDER

No. 13325

Project Name: <i>NYNEX Rutland, VT</i>	Firm: <i>ENVIXOTEL, Inc.</i>
Project Number: <i>NYNX 0084.01</i>	Address: <i>82 South St.</i>
Sampler Name: <i>B. Wilcox</i>	City / State / Zip: <i>Hodginton, MA 01748</i>
Project Manager: <i>B. Wilcox</i>	Telephone: <i>(508) 435-8080</i>

TURNAROUND
<input checked="" type="checkbox"/> STANDARD (10 Business Days) <input type="checkbox"/> PRIORITY (5 Business Days) <input type="checkbox"/> RUSH (RAN- _____) <small>(Rush requires Rush Authorization Number)</small> Please FAX <input type="checkbox"/> YES <input type="checkbox"/> NO FAX Number: _____

ANALYSIS REQUEST										
Volatiles		Semivolatiles		Pest/Herb	Metals	Hydrocarbons	Max. Waste	Other		
<input type="checkbox"/> Low Level Soil <input type="checkbox"/> MTBE <input type="checkbox"/> TBA <input type="checkbox"/> TCE <input type="checkbox"/> THF <input type="checkbox"/> TCE Search <input type="checkbox"/> MTBE <input type="checkbox"/> MTBE	<input type="checkbox"/> 502.2 <input type="checkbox"/> 502.2 <input type="checkbox"/> 502.2 <input type="checkbox"/> 502.2 <input type="checkbox"/> 502.2 <input type="checkbox"/> 502.2 <input type="checkbox"/> 502.2 <input type="checkbox"/> 502.2 <input type="checkbox"/> 502.2 <input type="checkbox"/> 502.2	<input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508	<input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508	<input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508	<input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508	<input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508	<input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508	<input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508	<input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508	<input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508 <input type="checkbox"/> 508

BILLING

Purchase Order No: _____

INSTRUCTIONS: Use separate line for each container (except duplicates).

Sampling		SAMPLE IDENTIFICATION	Matrix			Container(s)					Preservation					Filtered		LABORATORY NUMBER (Lab Use Only)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
DATE	TIME		WATER	SOIL	WASTE	NUMBER	40mL VOA VIAL	IL GLASS	500mL GLASS	IL PLASTIC	500mL PLASTIC	1 L Plastic Bottle	NaHSO ₄	HCl	HNO ₃	H ₂ SO ₄	ICE		YES	NO																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											

REMARKS / SPECIAL INSTRUCTIONS	PROJECT SPECIFIC MATRIX SPIKES and DUPLICATES	CHAIN-OF-CUSTODY RECORD		
Use low detection limits for all G-W samples VOC 602 and 8260 TCL	Many regulatory programs and EPA methods require project specific matrix spikes and/or duplicates. Each requested matrix spike (MS), matrix spike duplicate (MSD) and sample duplicate should be listed above as a separate sample. Each MS, MSD and sample duplicate requires an additional sample aliquot. <input type="checkbox"/> YES. Please perform a project specific MS, MSD or sample duplicate as requested above. <input type="checkbox"/> NO. Please do not perform a project specific MS, MSD or sample duplicate analysis for this project.	NOTE: All samples submitted subject to Standard Terms and Conditions on reverse hereof.		
		Relinquished by Sampler: <i>Brian Wilcox</i>	Date Time 3/18/95 1700	Received by: <i>ENVIXOTEL</i>
		Relinquished by: <i>Brian Wilcox</i>	Date Time 3/21/95 1740	Received by: <i>Alan Maddigan</i>
		Relinquished by: <i>Alan Maddigan</i>	Date Time 3/21/95 7:30 AM	Received by Laboratory: <i>James Lee</i>
Method of Shipment: <input checked="" type="checkbox"/> GWA Courier <input type="checkbox"/> Express Mail <input type="checkbox"/> Federal Express <input type="checkbox"/> UPS <input type="checkbox"/> Hand <input type="checkbox"/> _____		Shipping/Airbill Number: Custody Seal Number: Cooler Serial Number:		

GROUNDWATER ANALYTICAL

Groundwater Analytical, Inc.
228 Main Street
Buzzards Bay, MA 02532
Telephone (508) 759-4441
FAX (508) 759-4475

February 9, 1995

Mr. Bill Wilcox
EnviroTEL, Inc.
258 Main Street
Milford, MA 01757

Dear Bill:

Enclosed are the Volatile Organics and Hydrocarbon Fingerprint Analyses performed for the NYNEX Route 7 Rutland project, number NYNX 0084.01, sampled on 01-23-95 and 01-24-95. This project was processed for Standard Two Week turnaround.

A brief description of the Quality Assurance/Quality Control procedures employed by Groundwater Analytical, and a statement of our state certifications are contained within the report. This letter authorizes the release of the analytical results and should be considered a part of this report.

Should you have any questions concerning this report, please do not hesitate to contact me.

Sincerely,



Jonathan R. Sanford
Vice President

JRS/adw
Enclosures

GROUNDWATER ANALYTICAL

EPA METHOD 602
Volatile Aromatics (GC/PID)

Field ID: NYNEX-1
Project: NYNEX Route 7 Rutland/NYNX 0084.01
Client: EnviroTEL
Cont/Prsv: 40mL VOA Vial/HCl Cool
Matrix: Aqueous

Lab ID: 9847-07
Batch ID: VG3-0340-W
Sampled: 01-24-95
Received: 01-26-95
Analyzed: 02-03-95

PARAMETER	CONCENTRATION (ug/L)		REPORTING LIMIT (ug/L)	
Methyl tert-Butyl Ether *	BRL		5	
Benzene	BRL		1	
Toluene	BRL		1	
Chlorobenzene	BRL		1	
Ethylbenzene	BRL		1	
meta-and para-Xylene *	BRL		1	
ortho-Xylene *	BRL		1	
1,3-Dichlorobenzene	BRL		1	
1,4-Dichlorobenzene	BRL		1	
1,2-Dichlorobenzene	BRL		1	
QC SURROGATE COMPOUND	SPIKED	MEASURED	RECOVERY	QC LIMITS
a,a,a-Trifluorotoluene	30	31	104 %	87 - 113 %

BRL = Below Reporting Limit. * Non-target compound. Method Reference: Method 602 - Purgeable Aromatics, 40 C.F.R. 136, Appendix A (1986).

GROUNDWATER ANALYTICAL

EPA METHOD 8020
Volatile Aromatics (GC/PID)

Field ID: B-1
Project: NYNEX Route 7 Rutland/NYNX 0084.01
Client: EnviroTEL
Cont/Prsv: 125mL Glass/Cool
Matrix: Soil Percent Moisture: 16 %

Lab ID: 9847-01
Batch ID: VG2-0544-E
Sampled: 01-23-95
Received: 01-26-95
Analyzed: 02-02-95

PARAMETER	CONCENTRATION (ug/Kg)	REPORTING LIMIT (ug/Kg)
Methyl <i>tert</i> -Butyl Ether *	BRL	250
Benzene	BRL	50
Toluene	BRL	50
Chlorobenzene	BRL	50
Ethylbenzene	BRL	50
<i>meta</i> -and <i>para</i> -Xylene	BRL	50
<i>ortho</i> -Xylene	BRL	50
1,3-Dichlorobenzene	BRL	50
1,4-Dichlorobenzene	BRL	50
1,2-Dichlorobenzene	BRL	50
QC SURROGATE COMPOUND	SPIKED	MEASURED
a,a,a-Trifluorotoluene	1,500	1,400
		RECOVERY
		92 %
		QC LIMITS
		77 - 119 %

BRL = Below Reporting Limit. * Non-target compound. Calculations based on dry sample weight. Method References: Method 8020 - Aromatic Volatile Organics, and Method 5030 - Methanol Extraction Procedure, Test Methods for Evaluating Solid Waste, US EPA SW-846, Third Edition (1986).

GROUNDWATER ANALYTICAL

EPA METHOD 8020
Volatile Aromatics (GC/PID)

Field ID: B-2
Project: NYNEX Route 7 Rutland/NYNX 0084.01
Client: EnviroTEL
Cont/Prsv: 125mL Glass/Cool
Matrix: Soil Percent Moisture: 15 %

Lab ID: 9847-02
Batch ID: VG2-0544-E
Sampled: 01-23-95
Received: 01-26-95
Analyzed: 02-02-95

PARAMETER	CONCENTRATION (ug/Kg)	REPORTING LIMIT (ug/Kg)
Methyl tert-Butyl Ether *	BRL	250
Benzene	BRL	50
Toluene	BRL	50
Chlorobenzene	BRL	50
Ethylbenzene	BRL	50
meta-and para-Xylene	BRL	50
ortho-Xylene	BRL	50
1,3-Dichlorobenzene	BRL	50
1,4-Dichlorobenzene	BRL	50
1,2-Dichlorobenzene	BRL	50
QC SURROGATE COMPOUND	SPIKED	MEASURED
a,a,a-Trifluorotoluene	1,500	1,400
		RECOVERY
		94 %
		QC LIMITS
		77 - 119 %

BRL = Below Reporting Limit. * Non-target compound. Calculations based on dry sample weight. Method References: Method 8020 - Aromatic Volatile Organics, and Method 5030 - Methanol Extraction Procedure, Test Methods for Evaluating Solid Waste, US EPA SW-846, Third Edition (1986).

GROUNDWATER ANALYTICAL

EPA METHOD 8020
Volatile Aromatics (GC/PID)

Field ID:	B-3	Lab ID:	9847-03
Project:	NYNEX Route 7 Rutland/NYNX 0084.01	Batch ID:	VG2-0544-E
Client:	EnviroTEL	Sampled:	01-23-95
Cont/Prsv:	125mL Glass/Cool	Received:	01-26-95
Matrix:	Soil	Analyzed:	02-02-95
	Percent Moisture: 13 %		

PARAMETER	CONCENTRATION (ug/Kg)		REPORTING LIMIT (ug/Kg)	
Methyl tert-Butyl Ether *	BRL		250	
Benzene	BRL		50	
Toluene	BRL		50	
Chlorobenzene	BRL		50	
Ethylbenzene	BRL		50	
meta-and para-Xylene	BRL		50	
ortho-Xylene	BRL		50	
1,3-Dichlorobenzene	BRL		50	
1,4-Dichlorobenzene	BRL		50	
1,2-Dichlorobenzene	BRL		50	
QC SURROGATE COMPOUND	SPIKED	MEASURED	RECOVERY	QC LIMITS
a,a,a-Trifluorotoluene	1,500	1,300	89 %	77 - 119 %

BRL = Below Reporting Limit. * Non-target compound. Calculations based on dry sample weight. Method References: Method 8020 - Aromatic Volatile Organics, and Method 5030 - Methanol Extraction Procedure, Test Methods for Evaluating Solid Waste, US EPA SW-846, Third Edition (1986).

GROUNDWATER ANALYTICAL

EPA METHOD 8020
Volatile Aromatics (GC/PID)

Field ID: B-4
Project: NYNEX Route 7 Rutland/NYNX 0084.01
Client: EnviroTEL
Cont/Prsv: 125mL Glass/Cool
Matrix: Soil Percent Moisture: 14 %

Lab ID: 9847-04
Batch ID: VG2-0544-E
Sampled: 01-24-95
Received: 01-26-95
Analyzed: 02-02-95

PARAMETER	CONCENTRATION (ug/Kg)		REPORTING LIMIT (ug/Kg)	
Methyl <i>tert</i> -Butyl Ether *	BRL		250	
Benzene	BRL		50	
Toluene	BRL		50	
Chlorobenzene	BRL		50	
Ethylbenzene	BRL		50	
<i>meta</i> -and <i>para</i> -Xylene	BRL		50	
<i>ortho</i> -Xylene	BRL		50	
1,3-Dichlorobenzene	BRL		50	
1,4-Dichlorobenzene	BRL		50	
1,2-Dichlorobenzene	BRL		50	
QC SURROGATE COMPOUND	SPIKED	MEASURED	RECOVERY	QC LIMITS
a,a,a-Trifluorotoluene	1,500	1,400	92 %	77 - 119 %

BRL = Below Reporting Limit. * Non-target compound. Calculations based on dry sample weight. Method References: Method 8020 - Aromatic Volatile Organics, and Method 5030 - Methanol Extraction Procedure, Test Methods for Evaluating Solid Waste, US EPA SW-846, Third Edition (1986).

GROUNDWATER ANALYTICAL

EPA METHOD 8020
Volatile Aromatics (GC/PID)

Field ID: B-5
Project: NYNEX Route 7 Rutland/NYNX 0084.01
Client: EnviroTEL
Cont/Prsv: 125mL Glass/Cool
Matrix: Soil Percent Moisture: 13 %

Lab ID: 9847-05
Batch ID: VG2-0544-E
Sampled: 01-24-95
Received: 01-26-95
Analyzed: 02-02-95

PARAMETER	CONCENTRATION (ug/Kg)	REPORTING LIMIT (ug/Kg)
Methyl tert-Butyl Ether *	BRL	250
Benzene	BRL	50
Toluene	BRL	50
Chlorobenzene	BRL	50
Ethylbenzene	BRL	50
meta-and para-Xylene	BRL	50
ortho-Xylene	BRL	50
1,3-Dichlorobenzene	BRL	50
1,4-Dichlorobenzene	BRL	50
1,2-Dichlorobenzene	BRL	50
QC SURROGATE COMPOUND	SPIKED	MEASURED
a,a,a-Trifluorotoluene	1,500	1,400
		RECOVERY
		93 %
		QC LIMITS
		77 - 119 %

BRL = Below Reporting Limit. * Non-target compound. Calculations based on dry sample weight. Method References: Method 8020 - Aromatic Volatile Organics, and Method 5030 - Methanol Extraction Procedure, Test Methods for Evaluating Solid Waste, US EPA SW-846, Third Edition (1986).

GROUNDWATER ANALYTICAL

EPA METHOD 8260/TCL Volatile Organics (GC/MS)

Field ID: B-6
Project: NYNEX Route 7 Rutland/NYNX 0084.01
Client: EnviroTEL
Cont/Prsv: 125mL Glass/Cool
Matrix: Soil Percent Moisture: 29 %

Lab ID: 9847-06
Batch ID: VM2-0930-E
Sampled: 01-24-95
Received: 01-26-95
Analyzed: 02-04-95

PARAMETER	CONCENTRATION (ug/Kg)	REPORTING LIMIT (ug/Kg)
Chloromethane	BRL	2,000
Vinyl Chloride	BRL	2,000
Bromomethane	BRL	2,000
Chloroethane	BRL	2,000
1,1-Dichloroethene	BRL	1,000
Acetone	BRL	10,000
Carbon Disulfide	BRL	1,000
Methylene Chloride	BRL	1,000
<i>trans</i> -1,2-Dichloroethene	BRL	1,000
1,1-Dichloroethane	BRL	1,000
<i>cis</i> -1,2-Dichloroethene	BRL	1,000
2-Butanone	BRL	10,000
Chloroform	BRL	1,000
1,1,1-Trichloroethane	BRL	1,000
Carbon Tetrachloride	BRL	1,000
Benzene	BRL	1,000
1,2-Dichloroethane	BRL	1,000
Trichloroethene	BRL	1,000
1,2-Dichloropropane	BRL	1,000
Bromodichloromethane	BRL	1,000
<i>cis</i> -1,3-Dichloropropene	BRL	1,000
4-Methyl-2-Pentanone	BRL	10,000
Toluene	900 j	1,000
<i>trans</i> -1,3-Dichloropropene	BRL	1,000
1,1,2-Trichloroethane	BRL	1,000
Tetrachloroethene	BRL	1,000
2-Hexanone	BRL	10,000
Dibromochloromethane	BRL	1,000
Chlorobenzene	BRL	1,000
Ethylbenzene	7,300	1,000
<i>meta</i> -and <i>para</i> -Xylene	30,000	1,000
<i>ortho</i> -Xylene	13,000	1,000
Styrene	BRL	1,000
Bromoform	BRL	1,000
1,1,2,2-Tetrachloroethane	BRL	1,000

QC SURROGATE COMPOUNDS	SPIKED	MEASURED	RECOVERY	QC LIMITS
Dibromofluoromethane	2,500	620	25 % m	70 - 121 %
Toluene-d8	2,500	1,800	73 % m	84 - 138 %
4-Bromofluorobenzene	2,500	1,900	75 %	59 - 113 %

j = Analyte detected below the reporting limit. Analyte result is an estimate. m = Surrogate recovery outside recommended limits due to sample matrix interference. Elevated reporting limit due to required sample dilution. BRL = Below Reporting Limit. Concentrations reported on dry sample weight basis. Method Reference: Method 8260 - Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry: Capillary Column Technique, High Concentration Methanol Extraction Method, Test Methods for Evaluating Solid Waste, US EPA SW-846, Third Edition (Revised 1992). Parameter list is specified by the Target Compound List (TCL) of the US EPA Contract Laboratory Program.

GROUNDWATER ANALYTICAL

ASTM METHOD D3328-78 (Modified)
Hydrocarbon Fingerprinting (GC/FID)

Field ID: B-6
Project: NYNEX Route 7 Rutland/NYNX 0085-01
Client: EnviroTEL
Cont/Prsv: 125ml Glass/Cool
Matrix: Soil Percent Moisture: 25 %

Lab ID: 9847-08
Batch ID: HF-0496-X
Sampled: 01-24-95
Received: 01-26-95
Extracted: 02-02-95
Analyzed: 02-04-95

Qualitative Identification

This sample has GC/FID characteristics that are similar to a mixture of Kerosene, petroleum products in the Fuel Oil range, a Lubricating Oil in the n-C 20 to n-C 34 range and polar components in the n-C 17 to n-C 18 range.

Quantification

PARAMETER	CONCENTRATION (mg/Kg)		REPORTING LIMIT (mg/Kg)	
Total Petroleum Hydrocarbons	9,200		64	
QC SURROGATE COMPOUND	SPIKED	MEASURED	RECOVERY	QC LIMITS
o-Terphenyl	0.86	d	N/A	60 - 140 %

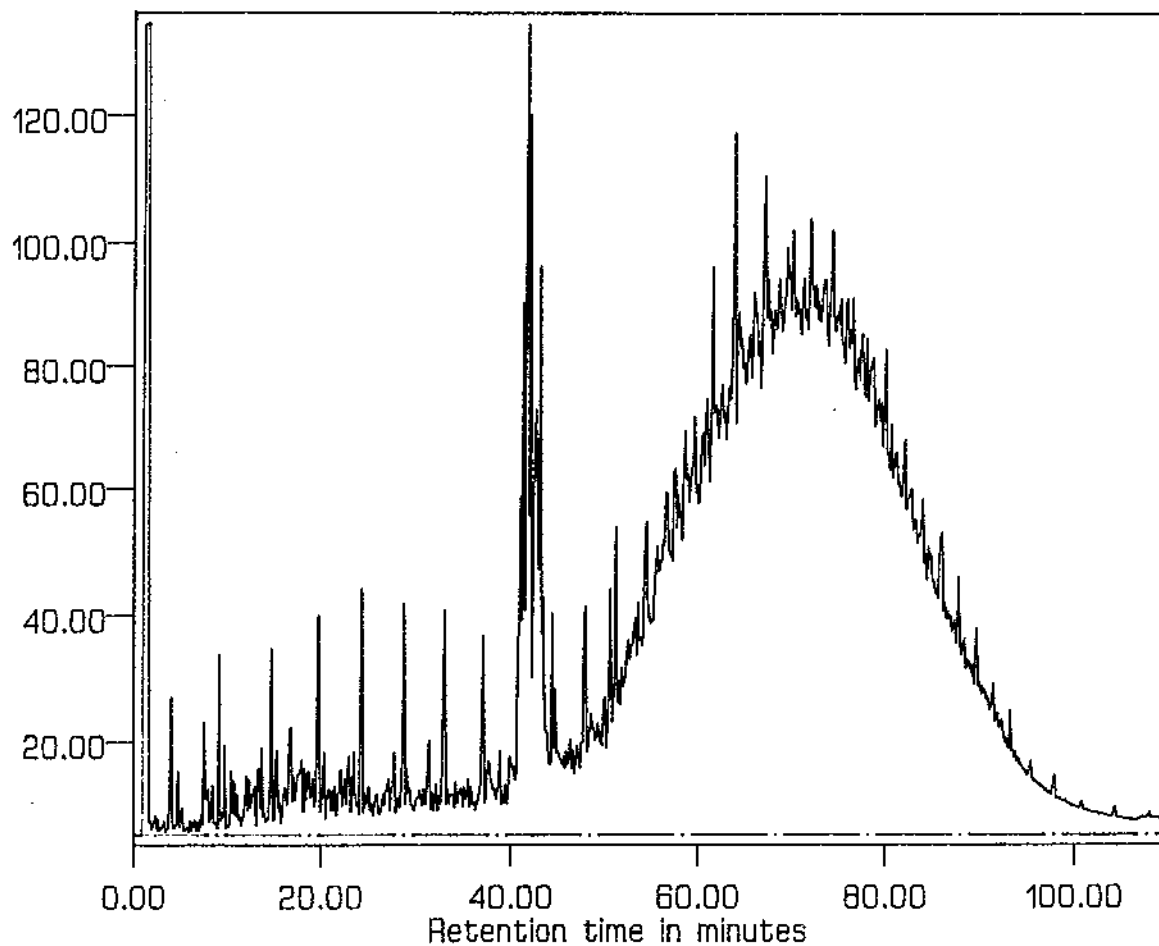
d = Surrogate recovery outside recommended limits due to required sample dilution. Elevated reporting limit due to required sample dilution. BRL = Below Reporting Limit. Calculations based on dry sample weight. Method References: Method D3328-78 (Modified) - Comparison of Waterborne Petroleum Oils by Gas Chromatography, Volume 11.02 Water, American Society for Testing and Materials, Reapproved (1982). Adapted for solids by Method 3540 (Modified) - Soxhlet Extraction, Test Methods for Evaluating Solid Waste, US EPA SW-846, Third Edition (1986).

**GROUNDWATER
ANALYTICAL**

ASTM METHOD D3328-78 (Modified)
Hydrocarbon Fingerprinting (GC/FID)

Lab ID: 9847-08 1/10

HYDROCARBONS LABORATORY



GROUNDWATER ANALYTICAL

QUALITY ASSURANCE Project Narrative

Project: NYNEX Route 7 Rutland/NYNX 0084.01
Client: EnviroTEL

Lab ID: 9847
Received: 01-26-95

A. Physical Condition of Sample(s)

This project was received by the laboratory in satisfactory condition. The sample(s) were received in appropriate containers with the correct preservation.

B. Project Documentation

This project was accompanied by Chain of Custody documentation, with the following amendment(s) or correction(s):

1. Sample 9847-06 was received in one 125mL glass container.
2. Sample 9847-08 was received in one 250mL glass container.
3. Sample 9847-08 was analyzed by ASTM D3328-78-Mod Hydrocarbon Fingerprint per Bill Wilcox, 02-06-95.

C. Analysis of Sample(s)

The following analytical anomalies or non-conformances were noted by the laboratory during the processing of these samples:

1. Sample 9847-06 for analysis by EPA Method 8260 had surrogate recoveries outside recommended limits due to sample matrix interference.

GROUNDWATER ANALYTICAL

226 Main Street
Buzzards Bay, MA 02532
Telephone (508) 759-4441
FAX (508) 759-4475

CHAIN-OF-CUSTODY RECORD AND WORK ORDER

No. 14286

Project Name: <i>NYNEX, Route 7, Rutherford</i>	Firm: <i>ENVICOTEL, INC.</i>
Project Number: <i>NYNX 0084.01</i>	Address: <i>258 Main St, Suite 202</i>
Sampler Name: <i>B. Wilcox</i>	City / State / Zip: <i>Milford, MA 01757</i>
Project Manager: <i>B. Wilcox</i>	Telephone: <i>(508) 470-5088</i>

TURNAROUND	
<input checked="" type="checkbox"/> STANDARD (10 Business Days) <input type="checkbox"/> PRIORITY (5 Business Days) <input type="checkbox"/> RUSH (RAN- _____) <small>(Rush requires Rush Authorization Number)</small> Please FAX <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO FAX Number: <i>(508) 634-9088</i>	

ANALYSIS REQUEST												
Volatiles		SemiVolatiles		Pest/Herb		Metals		Hydrocarbons		Other		
<input type="checkbox"/> Low Level Soil <input type="checkbox"/> MTBE <input type="checkbox"/> TBA <input type="checkbox"/> DEB <input type="checkbox"/> THF <input type="checkbox"/> DTIC Search	<input type="checkbox"/> MTBE <input type="checkbox"/> DTIC Search	<input type="checkbox"/> Basic Only <input type="checkbox"/> IBIN Only <input type="checkbox"/> OPAs Only <input type="checkbox"/> DTIC Search	<input type="checkbox"/> PCBs Only <input type="checkbox"/> PCBs Only <input type="checkbox"/> PCBs Only <input type="checkbox"/> PCBs Only	<input type="checkbox"/> 504 <input type="checkbox"/> 504 <input type="checkbox"/> 504 <input type="checkbox"/> 504	<input type="checkbox"/> 504 <input type="checkbox"/> 504 <input type="checkbox"/> 504 <input type="checkbox"/> 504	<input type="checkbox"/> 504 <input type="checkbox"/> 504 <input type="checkbox"/> 504 <input type="checkbox"/> 504	<input type="checkbox"/> 504 <input type="checkbox"/> 504 <input type="checkbox"/> 504 <input type="checkbox"/> 504	<input type="checkbox"/> 504 <input type="checkbox"/> 504 <input type="checkbox"/> 504 <input type="checkbox"/> 504	<input type="checkbox"/> 504 <input type="checkbox"/> 504 <input type="checkbox"/> 504 <input type="checkbox"/> 504	<input type="checkbox"/> 504 <input type="checkbox"/> 504 <input type="checkbox"/> 504 <input type="checkbox"/> 504	<input type="checkbox"/> 504 <input type="checkbox"/> 504 <input type="checkbox"/> 504 <input type="checkbox"/> 504	<input type="checkbox"/> 504 <input type="checkbox"/> 504 <input type="checkbox"/> 504 <input type="checkbox"/> 504

INSTRUCTIONS: Use separate line for each container (except duplicates).

BILLING

Purchase Order No:

Sampling		SAMPLE IDENTIFICATION	Matrix		Container(s)		Preservation		Filtered		LABORATORY NUMBER (Lab Use Only)
DATE	TIME		WATER	SOIL	WASTE	NUMBER	40mL VOA VIAL	IL GLASS	IL GLASS	IL GLASS	
1/23/95	1000	B-1				1					9847-01
1/23/95	315	B-2				1					02
1/23/95	400	B-3				1					03
1/24/95	815	B-4				1					04
1/24/95	1100	B-5				1					05
1/24/95	1400	B-6				1					0608
1/24/95	1415	NYNEX-1				3	3				07

REMARKS / SPECIAL INSTRUCTIONS

VOC 60 + MTBE for NYNEX-1
Water sample, All soil VOC 8020 +
MTBE

NOTICE: Amendments or
corrections are included
in Project Narrative

PROJECT SPECIFIC MATRIX SPIKES and DUPLICATES

Many regulatory programs and EPA methods require project specific matrix spikes and/or duplicates. Each requested matrix spike (MS), matrix spike duplicate (MSD) and sample duplicate should be listed above as a separate sample. Each MS, MSD and sample duplicate requires an additional sample aliquot.

- ☐ YES. Please perform a project specific MS, MSD or sample duplicate as requested above.
☐ NO. Please do not perform a project specific MS, MSD or sample duplicate analysis for this project.

CHAIN-OF-CUSTODY RECORD

NOTE: All samples submitted subject to Standard Terms and Conditions on reverse hereof.

Relinquished by Sampler: <i>B. Wilcox</i>	Date <i>1/24/95</i>	Time <i>12:48</i>	Received by: <i>James Long</i>
Relinquished by:	Date	Time	Received by:
Relinquished by: <i>James Long</i>	Date <i>1/24/95</i>	Time <i>5:54pm</i>	Received by Laboratory: <i>Alley</i>
Method of Shipment: <input checked="" type="checkbox"/> GWA Courier <input type="checkbox"/> Express Mail <input type="checkbox"/> Federal Express <input type="checkbox"/> UPS <input type="checkbox"/> Hand <input type="checkbox"/>			

Shipping/Airbill Number:

Custody Seal Number:

Cooler Serial Number:

ORIGINAL - LAB YELLOW - CLIENT

GROUNDWATER ANALYTICAL

QUALITY ASSURANCE QA/QC Program Statement

Groundwater Analytical conducts an active Quality Assurance program to ensure the production of high quality, valid data. This program closely follows the guidance provided by *Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans*, US EPA QAMS-005/80 (1980), and *Test Methods for Evaluating Solid Waste*, US EPA SW-846, Third Edition (Revised 1992).

Quality Control protocols include Standard Operating Procedures (SOPs) developed for each analytical method. SOPs are derived from US EPA methodologies and other established references. Equipment and facility maintenance conform to Good Laboratory Practices (GLPs). Standards are prepared from commercially obtained reference materials of certified purity, and documented for traceability.

Quality Assessment protocols for most organic analyses include a minimum of one calibration standard, one method blank, one laboratory control sample, and one matrix spike and one sample duplicate for each sample batch. All samples, standards, blanks, laboratory control samples and matrix spikes are spiked with internal standards and surrogate compounds. GC/MS systems are tuned to BFB ion abundance criteria daily, or for each 12 hour operating period, whichever is more frequent.

Quality Assessment protocols for most inorganic analyses include a minimum of one calibration standard, one method blank, one laboratory control sample, one matrix spike and one sample duplicate for each sample batch. Standard curves are derived from one reagent blank and four concentration levels. Curve validity is verified by standard recoveries within plus or minus ten percent of the curve.

Batches are used as the basic unit for Quality Assessment. A Batch is defined as twenty or fewer samples which are analyzed together with the same method sequence and the same lots of reagents and with the same manipulations common to each sample within the same continuum of time within a 24 hour period.

Method Blanks are used to assess the level of contamination present in the analytical system. Method Blanks consist of reagent water or an aliquot of sodium sulfate. Method Blanks are taken through all the appropriate steps of an analytical method. Sample data reported is not corrected for blank contamination.

Laboratory Control Samples are used to assess the accuracy of the analytical method. A Laboratory Control Sample consists of reagent water or sodium sulfate spiked with a group of target compounds representative of the method analytes. Accuracy is defined as the degree of agreement of a measured value with the true or expected value. Percent Recoveries for the Laboratory Control Sample are calculated to assess accuracy.

Surrogate Compounds are used to assess the effectiveness of the method in dealing with each sample matrix. Surrogate Compounds are organic compounds which are similar to organic analytes of interest in chemical behavior, but which are not normally found in environmental samples. Percent Recoveries are calculated for each Surrogate Compound.

GROUNDWATER ANALYTICAL

QUALITY ASSURANCE Laboratory Control Sample Recovery

Category: EPA Method 8020/Methanol Extraction
Batch ID: VG2-0544-EL
Matrix: Soil
Units: ug/Kg

Laboratory Control Sample

ANALYTE	SPIKE ADDED	SPIKED RESULT	PERCENT RECOVERY	QC LIMITS
Benzene	2,500	2,400	96 %	66-142
Toluene	2,500	2,600	102 %	59-139
Chlorobenzene	2,500	2,700	107 %	60-133

All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

GROUNDWATER ANALYTICAL

QUALITY ASSURANCE
Method Blank

Category: EPA Method 8020/Methanol Extraction
Batch ID: VG2-0544-EB1
Matrix: Soil

PARAMETER	CONCENTRATION (ug/Kg)		REPORTING LIMIT (ug/Kg)	
Methyl tert-Butyl Ether *	BRL		250	
Benzene	BRL		50	
Toluene	BRL		50	
Chlorobenzene	BRL		50	
Ethylbenzene	BRL		50	
meta-and para-Xylene	BRL		50	
ortho-Xylene	BRL		50	
1,3-Dichlorobenzene	BRL		50	
1,4-Dichlorobenzene	BRL		50	
1,2-Dichlorobenzene	BRL		50	
QC SURROGATE COMPOUND	SPIKED	MEASURED	RECOVERY	QC LIMITS
a,a,a-Trifluorotoluene	1,500	1,500	100 %	77 - 119 %

BRL = Below Reporting Limit. * Non-target compound. Calculations based on dry sample weight. Method References: Method 8020 - Aromatic Volatile Organics, and Method 5030 - Methanol Extraction Procedure, Test Methods for Evaluating Solid Waste, US EPA SW-846, Third Edition (1986).

GROUNDWATER ANALYTICAL

QUALITY ASSURANCE Laboratory Control Sample Recovery

Category: EPA Method 8260
Batch ID: VM2-0930-EL
Matrix: Soil
Units: ug/Kg

Laboratory Control Sample

ANALYTE	SPIKE ADDED	SPIKED RESULT	PERCENT RECOVERY	QC LIMITS
1,1 Dichloroethene	2,500	2,200	87 %	59-172
Benzene	2,500	3,000	121 %	66-142
Trichloroethene	2,500	2,400	96 %	62-137
Toluene	2,500	3,000	118 %	59-139
Chlorobenzene	2,500	2,700	109 %	60-133

All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

GROUNDWATER ANALYTICAL

QUALITY ASSURANCE Method Blank

Category: EPA Method 8260/TCL/Methanol Extraction
Batch ID: VM2-0930-EB1
Matrix: Soil

PARAMETER	CONCENTRATION (ug/Kg)	REPORTING LIMIT (ug/Kg)
Chloromethane	BRL	500
Vinyl Chloride	BRL	500
Bromomethane	BRL	500
Chloroethane	BRL	500
1,1-Dichloroethene	BRL	250
Acetone	BRL	2,500
Carbon Disulfide	BRL	250
Methylene Chloride	BRL	250
<i>trans</i> -1,2-Dichloroethene	BRL	250
Methyl <i>tert</i> -butyl Ether *	BRL	250
1,1-Dichloroethane	BRL	250
<i>cis</i> -1,2-Dichloroethene	BRL	250
2-Butanone	BRL	2,500
Chloroform	BRL	250
1,1,1-Trichloroethane	BRL	250
Carbon Tetrachloride	BRL	250
Benzene	BRL	250
1,2-Dichloroethane	BRL	250
Trichloroethene	BRL	250
1,2-Dichloropropane	BRL	250
Bromodichloromethane	BRL	250
<i>cis</i> -1,3-Dichloropropene	BRL	250
4-Methyl-2-Pentanone	BRL	2,500
Toluene	BRL	250
<i>trans</i> -1,3-Dichloropropene	BRL	250
1,1,2-Trichloroethane	BRL	250
Tetrachloroethene	BRL	250
2-Hexanone	BRL	2,500
Dibromochloromethane	BRL	250
Chlorobenzene	BRL	250
Ethylbenzene	BRL	250
<i>meta</i> -and <i>para</i> -Xylene	BRL	250
<i>ortho</i> -Xylene	BRL	250
Styrene	BRL	250
Bromoform	BRL	250
1,1,2,2-Tetrachloroethane	BRL	250

QC SURROGATE COMPOUNDS	SPIKED	MEASURED	RECOVERY	QC LIMITS
Dibromofluoromethane	2,500	2,300	94 %	70 - 121 %
Toluene-d8	2,500	2,600	103 %	81 - 117 %
4-Bromofluorobenzene	2,500	2,500	101 %	74 - 121 %

BRL = Below Reporting Limit. * Non-target compound. Concentrations reported on dry sample weight basis.
Method Reference: Method 8260 - Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry:
Capillary Column Technique, High Concentration Methanol Extraction Method, Test Methods for Evaluating
Solid Waste, US EPA SW-846, Third Edition (Revised 1992). Parameter list as specified by the Target
Compound List (TCL) of the US EPA Contract Laboratory Program.

GROUNDWATER ANALYTICAL

QUALITY ASSURANCE Laboratory Control Sample Recovery

Category: EPA Method 602
Batch ID: VG3-0340-WL
Matrix: Aqueous
Units: ug/L

Laboratory Control Sample

ANALYTE	SPIKE ADDED	SPIKED RESULT	PERCENT RECOVERY	QC LIMITS
Benzene	50	53	105 %	76-127
Toluene	50	52	103 %	76-125
Chlorobenzene	50	55	109 %	75-130

All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

GROUNDWATER ANALYTICAL

QUALITY ASSURANCE Method Blank

Category: EPA Method 602
Batch ID: VG3-0340-WB1
Matrix: Aqueous

PARAMETER	CONCENTRATION (ug/L)		REPORTING LIMIT (ug/L)	
Methyl <i>tert</i> -Butyl Ether *	BRL		5	
Benzene	BRL		1	
Toluene	BRL		1	
Chlorobenzene	BRL		1	
Ethylbenzene	BRL		1	
<i>meta</i> -and <i>para</i> -Xylene *	BRL		1	
<i>ortho</i> -Xylene *	BRL		1	
1,3-Dichlorobenzene	BRL		1	
1,4-Dichlorobenzene	BRL		1	
1,2-Dichlorobenzene	BRL		1	
QC SURROGATE COMPOUND	SPIKED	MEASURED	RECOVERY	QC LIMITS
a,a,a-Trifluorotoluene	30	31	104 %	87 - 113 %

BRL = Below Reporting Limit. * Non-target compound. Method Reference: Method 602 - Purgeable Aromatics, 40 C.F.R. 136, Appendix A (1986).

GROUNDWATER ANALYTICAL

QUALITY ASSURANCE Laboratory Control Sample Recovery

Category: ASTM Method D3328-78 (Modified)
Batch ID: HF-0496-XL
Matrix: Soil
Units: mg/Kg

Laboratory Control Sample

ANALYTE	SPIKE ADDED	SPIKED RESULT	PERCENT RECOVERY	QC LIMITS
Fuel Oil No. 2	33	28	85 %	60-140

All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

GROUNDWATER ANALYTICAL

QUALITY ASSURANCE
Method Blank

Category: ASTM Method D3328-78 (Modified)
Batch ID: HF-0496-XB1
Matrix: Soil

PARAMETER	CONCENTRATION (mg/Kg)	REPORTING LIMIT (mg/Kg)
Total Petroleum Hydrocarbons	BRL	5.0

QC SURROGATE COMPOUND	SPIKED	MEASURED	RECOVERY	QC LIMITS
o-Terphenyl	0.67	0.58	87 %	60 - 140 %

BRL = Below Reporting Limit. Calculations based on dry sample weight. Method References: Method D3328-78 (Modified) - Comparison of Waterborne Petroleum Oils by Gas Chromatography, Volume 11.02 Water, American Society for Testing and Materials, Reapproved (1982). Adapted for solids by Method 3540 (Modified) - Soxhlet Extraction, Test Methods for Evaluating Solid Waste, US EPA SW-846, Third Edition (1986).

GROUNDWATER ANALYTICAL

QUALITY ASSURANCE State Certification

CONNECTICUT

Department of Health Services

**Certificate Number
PH-0586**

Potable Water, Wastewater/Trade Waste, Sewage/Effluent, and Soil: Purgeable Halocarbons, Purgeable Aromatics, Pesticides, Phenols, Oil and Grease, Aluminum, Antimony, Arsenic, Beryllium, Cadmium, Chromium-T, Chromium-VI, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Tin, Vanadium, Zinc, Cyanide, TDS, Ammonia, TKN, Nitrate, Ortho-Phosphate, Alkalinity, Hardness, Chloride, Fluoride, pH, Conductivity

MAINE

Department of Human Services

**Certificate Number
N/A**

Reciprocal certification in accordance with Massachusetts certification for drinking water parameters.

MASSACHUSETTS

Department of Environmental Protection

**Certificate Number
MA103**

Potable Water: Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Selenium, Silver, Sodium, Thallium, Nitrate-N, Fluoride, Cyanide, Calcium, Total Alkalinity, Total Dissolved Solids, pH, Langelier Index, Trihalomethanes, Volatile Organic Compounds, 1,2-Dibromoethane, 1,2-Dibromo-3-chloropropane. Non-Potable Water: Aluminum, Antimony, Arsenic, Beryllium, Cadmium, Chromium, Cobalt, Copper, Iron, Lead, Manganese, Mercury, Molybdenum, Nickel, Selenium, Silver, Strontium, Thallium, Titanium, Vanadium, Zinc, pH, Specific Conductivity, Total Dissolved Solids, Total Hardness, Calcium, Magnesium, Sodium, Potassium, Total Alkalinity, Chloride, Fluoride, Ammonia-N, Nitrate-N, Kjeldahl-N, Orthophosphate, Total Cyanide, Oil and Grease, Total Phenolics, Volatile Halocarbons, Volatile Aromatics, Chlordane, Aldrin, Dieldrin, DDD, DDE, DDT, Heptachlor, Heptachlor Epoxide, Polychlorinated Biphenyls (Water), Polychlorinated Biphenyls (Oil).

MICHIGAN

Department of Public Health

**Certificate Number
N/A**

Drinking Water: Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Cyanide, Fluoride, Lead, Mercury, Nickel, Nitrate, Nitrite, Selenium, Silver, Sodium, Sulfate, Thallium, Total Trihalomethanes, Regulated and Unregulated Volatile Organic Chemicals.

NEW HAMPSHIRE

Department of Environmental Services

**Certificate Number
202791-A/B**

Drinking Water: Lead, Selenium, Silver, Thallium, Trihalomethanes, Volatile Organics, Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Mercury, Nickel, Fluoride, Total Filterable Residue, Calcium, Alkalinity, pH, Corrosivity, Total Cyanide, Vinyl Chloride, DBCP and EDB. Wastewater: Arsenic, Beryllium, Cadmium, Cobalt, Copper, Iron, Mercury, Manganese, Nickel, Lead, Selenium, Zinc, Antimony, Silver, Thallium, Molybdenum, Strontium, pH, Total Hardness, Calcium, Sodium, Potassium, Total Alkalinity, Chloride, Fluoride, Nitrate-N, TKN, Orthophosphates, Total Phenolics, Oil & Grease, PCBs in Oil, Pesticides, Volatile Organics, Titanium, Total Cyanide, PCBs in Water.

RHODE ISLAND

Department of Health

**Certificate Number
A54**

Potable Water: Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Selenium, Silver, Thallium, Nitrate, Nitrite, Fluoride, Turbidity, Chlorine, Total Filterable Solids, Calcium, pH, Alkalinity, Sodium, Corrosivity, Sulfate, Cyanide, Trihalomethanes, Chlorinated Hydrocarbon Pesticides, PCBs, Herbicides, Volatile Organic Compounds (EPA 524.2 and 504) and PAHs. Non-potable and Waste Waters: Aluminum, Arsenic, Beryllium, Cadmium, Cobalt, Chromium, Copper, Iron, Mercury, Manganese, Nickel, Lead, Selenium, Vanadium, Zinc, Antimony, Silver, Thallium, Molybdenum, Strontium, Titanium, pH, Conductance, TDS, Hardness, Calcium, Magnesium, Sodium, Potassium, Alkalinity, Chloride, Fluoride, Sulfate, Ammonia, Nitrate, Orthophosphate, TKN, Total Phosphorous, Cyanide, Non-filterable solids, Oil and Grease, Total Phenolics, Chlorine, PCBs in Water, PCBs in Oil, Chlorinated Hydrocarbon Pesticides, Volatile Halocarbons, Volatile Aromatics, Acid Extractables and Base/Neutral Extractables.

APPENDIX C

UNDERGROUND STORAGE TANK CLOSURE REPORT

April 24, 1995

Mr. Michael LaRow
NYNEX - New England
125 High Street, Room 1006
Boston, MA 02110

Re: Underground Storage Tank Closure Report
NYNEX Garage
Route 7, Rutland, Vermont
Real Estate Code: 4751-07
EnviroTEL Project No. NYNX0084.01

Dear Mr. LaRow:

This letter report pertaining to the removal of one underground storage tank (UST) under the supervision of EnviroTEL, Inc. (EnviroTEL) is submitted for your records. A 4,000-gallon gasoline tank was removed from the NYNEX Garage located on Route 7 in Rutland, Vermont. This report summarizes actions taken and environmental conditions encountered during removal of the tank, and includes laboratory analytical data to confirm residual levels of petroleum compounds which remained in the soil upon completion of tank closure activities.

Please find attached copies of the following documentation pertaining to this project.

<u>Documentation</u>	<u>Attachment</u>
• VT DEC UST Removal Form, and Site Diagram	1
• Hazardous Waste Manifest	2
• Tank Yard Receipt Verification Documents	3
• Project Photographs	4
• UST and Soil Sample Location Plan	5
• Laboratory Data	6
• Site Expressway Notification	7

Should you have any questions or require additional information, please contact either of the undersigned at (508)435-8080.

Sincerely,

ENVIROTEL, INC.



William R. Wilcox, Jr.

Project Manager



Philip J. Wheeler, P.E.

Regional Manager

82 South Street Hopkinton, MA 01748 (508) 435-8080 Fax (508) 435-4351

UST REMOVAL ACTIVITIES

On December 20, 1994, one UST was removed from the NYNEX Garage located on Route 7 in Rutland, Vermont. This tank was removed by Cyn Environmental Services, Inc. (Cyn) as part of the NYNEX UST upgrade and removal program for this facility. Environmental oversight and soil testing for the tank removal were conducted by EnviroTEL in accordance with EnviroTEL's 1994 design specification for the NYNEX UST upgrade and removal program.

Weather conditions on the day of tank removal activities were partially cloudy and approximately 30 degrees Fahrenheit. William Wilcox was on-site for EnviroTEL, and Leo McDonald was the on-site foreman for Cyn during tank removal activities.

The asphalt coated single wall steel gasoline tank was located along the west side of the NYNEX garage. Please refer to the UST and Soil Sample Location Plan provided in Attachment 5, and photographs provided in Attachment 4.

Approximately 250-gallons of gasoline and water generated during tank cleaning activities were removed from this tank. All liquid waste generated from the tank cleaning activities was transported to Environmental Waste Resources, Inc. located at 130 Freight Street in Waterbury, Connecticut for disposal. A copy of the Uniform Hazardous Waste Manifest #MAG156750 is provided in Attachment 2.

The UST was buried approximately 2.5 feet below the ground surface. The UST was removed with a rubber-tired backhoe, cut, cleaned, and purged of vapors prior to transportation. The tank was found to be in good condition with minor corrosion, rust, and pitting. No holes or perforations were observed. The UST measured 60 inches in diameter by 24 feet. The fuel dispenser, piping, and steel vent line were removed entirely.

The size of the gasoline tank excavation was approximately 12 feet by 31 feet, and approximately eight feet deep. Groundwater was not encountered in the tank excavation at the time of removal.

REGULATORY ACTIVITIES

Notification of the tank removal was made to the Vermont Department of Environmental Conservation (VT DEC) and the record of notification is provided in Attachment 1. Mr. Mark Coleman from the VT DEC was notified of site conditions during tank removal by Mr. William Wilcox of EnviroTEL. The observation of strong gasoline-like vapors emanating from the

excavation, and elevated values for soil samples screened for the presence of volatile compounds using a Hnu photoionization detector (PID) for headspace analysis indicated a potential release of petroleum products to the surrounding soil. At Mr. Coleman's direction, the tank pit was backfilled with previously excavated petroleum-affected soil and additional bankrun gravel brought to the site by Cyn. The bottom of the tank excavation was lined with 6-mil polyethylene sheeting, backfilled with petroleum-affected soil to approximately 2.5 feet below grade, and covered with polyethylene sheeting. The excavation was then brought to grade with bank run gravel and crushed. A Site Investigation Expressway Notification was made with the VT DEC for further site investigation and assessment activity. The Site Investigation Expressway Notification Form is provided in Attachment 7.

ENVIRONMENTAL CONDITIONS

Under the asphalt and crushed stone driveway, soil lithology in the vicinity of the excavation included unconsolidated fine to medium sand with little gravel from 1 to 5.5 feet, and unconsolidated sand and gravel from 5.5 to 7.5 feet below the ground surface. Groundwater was not encountered in the tank excavation.

Strong gasoline-like odors were present in soil removed from, and in the tank excavation. Approximately 40-60 cubic yards of petroleum-affected soil were temporarily removed from the excavation to facilitate removal of the gasoline tank. During removal of the tank, EnviroTEL collected, and field screened soil samples for the presence of volatile compounds. The headspace analysis field screening technique measures relative volatile vapor concentrations in soil using a PID. The instrument used a 10.2 electron-volt lamp and was calibrated to a benzene standard for the measurement of volatile vapors on a volume-per-volume (ppm_v) basis. Using this procedure, a glass jar was half-filled with soil from the excavated area for headspace analysis. The peak headspace gas concentration of 280 ppm_v was recorded from a soil sample collected from the bottom of the tank excavation. Results of soil sample screening, after tank and impacted soil removal, for headspace gas are contained in Table 1.

Table 1
Headspace Soil Screening Results

Sample ID	Depth (feet)	PID (ppm _v)	Description
Gasoline Tank			
G BOT-1	8	280	south end of excavation
G BOT-2	8	280	north end of excavation
G SIDE-1	4-6	180	east sidewall of excavation
G SIDE-2	4-6	170	south sidewall of excavation
G SIDE-3	4-6	220	west sidewall of excavation
G SIDE-4	4-6	160	north sidewall of excavation

ppm_v Parts-Per-Million on a Volume Per Volume Basis to a Benzene Standard
 G Gasoline Tank
 BOT Bottom of Excavation
 SIDE Side of Excavation
 PID Hnu Photoionization Detector

Two composite soil samples were collected from the base of the excavation for laboratory analysis of total petroleum hydrocarbons (TPH) and volatile organic compound (VOC) concentrations. This data, summarized in Table 2, was used to determine if residual levels of petroleum compounds remained in the soil upon completion of tank removal activities.

ANALYTICAL RESULTS

Two composite soil samples were submitted to Groundwater Analytical, Inc. of Buzzards Bay, Massachusetts for laboratory analysis of TPH concentrations by U.S. Environmental Protection Agency (U.S. EPA) Method 8260 - Gasoline Range Organics (GRO), and VOC concentrations by U.S. EPA Method 8020.

Laboratory analysis of the soil samples collected from the bottom of the tank excavation revealed a TPH concentration of 9,400 milligrams/kilogram (mg/kg) for soil sample G BOT-1, and 17,000 mg/kg for G BOT-2. These concentrations are indicative of a petroleum release, and exceed the VT DEC guideline level of 1,000 mg/kg of TPH for a non-residential area. The VT DEC does

not have formal concentration standards for oil or Hazardous Materials in soil. However, the VT DEC follows the soil guideline level of 20 times the VT DEC Groundwater Standard for hazardous compounds.

VOC were also detected in both soil samples collected from the bottom of the tank excavation. VOC detected in soil sample G BOT-1 include benzene, toluene, ethylbenzene and xylenes, (BTEX). These compounds are commonly detected after a petroleum release, and in this case, the concentrations of benzene, toluene, ethylbenzene, and xylenes exceed the VT DEC Guideline Levels. These results, along with VT DEC Guideline Levels are summarized in Table 3. Please refer to Attachment 5, the UST and Soil Sample Location Plan for sample locations, and Attachment 6 for the laboratory data.

Table 2
Summary of Soil Sample Analysis

Gasoline-Range Organics - Method 8260

Compounds	Guideline* (mg/kg)	G BOT-1 (mg/kg)	G BOT-2 (mg/kg)
Total Petroleum Hydrocarbons	1,000	9,400	17,000

G Gasoline Tank Excavation
BOT Bottom of Excavation
* VT DEC does not have a formal standard regarding TPH levels in soil, however, VT DEC uses a Guideline Level of 1,000 mg/kg for sites in non-residential areas.

Table 3
Summary of Soil Sample Analysis

Volatile Organic Compounds - Method 8020 Analysis

Compounds	Guideline* (µg/kg)	G BOT-1 (µg/kg)	G BOT-2 (µg/kg)
Benzene	100	120,000	160,000
Toluene	20,000	730,000	1,300,000
Ethylbenzene	14,000	200,000	300,000
Total Xylenes	200,000	930,000	1,440,000

* VT DEC does not have formal standards for oil or hazardous materials in soil, however, the VT DEC uses a Guideline Level of 20 Times the VT DEC Drinking Water Standard as shown.
G Gasoline Tank Excavation
BOT Bottom of Excavation

DISPOSITION OF TANK AND SOIL

The bottom of the tank excavation was lined with 6-mil polyethylene sheeting, backfilled with previously excavated petroleum-affected soil to approximately 2.5 feet below grade, and covered with polyethylene sheeting. The excavation was then brought to grade with bank run gravel and crushed stone. The petroleum affected soil was used for backfill as directed by Mr. Mark Coleman of the VT DEC. The UST was delivered to F. P. Elnicki Scrap located on Clarendon Avenue in West Rutland, Vermont for reclamation. Records confirming receipt of the tank by the reclamation facility are provided in Attachment 3.

CONCLUSIONS

Based on field observations, field headspace analysis, and laboratory analysis of soil samples collected from the bottom of the tank excavation, there has been a release of petroleum products from the UST. The following is a summary of conditions observed during tank removal activities:

- The asphalt coated single wall steel gasoline tank was in good condition with minor corrosion, rust, and pitting. No holes or perforations were observed in the UST.
- Groundwater was not encountered in the excavation during tank removal activities.
- Strong gasoline-like odors were observed in soil surrounding and beneath the UST.
- Elevated TPH and VOC concentrations were detected in soil samples collected from the bottom of the excavation. The concentrations of TPH and VOC detected in the soil samples were in excess of the VT DEC Guideline Levels.
- A Site Investigation Expressway Notification was made to the VT DEC.

RECOMMENDATIONS

Based on the observations made during tank removal activities, soil screening headspace analysis, and laboratory analytical data, EnviroTEL recommends further environmental site investigation activities to determine the horizontal and vertical extent of the petroleum release.

ATTACHMENT 1

VT DEC UST Removal Form, and Site Diagram

VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION
UNDERGROUND STORAGE TANK PROGRAM
103 SOUTH MAIN STREET
WATERBURY, VERMONT 05671-0404
(802) 241-3884

PSL
12-20

Date of Removal: 12/20/94

Date of Assessment: 12/20/94

Person & Company Doing Assessment:

Mr. Bill Wilcox

Telephone Number: (504) 478-5028

ENVIRTEL Inc.

258 Main Street #202 Milford MA 01757

Business Name Where Tank(s) Located:

NET - Rutland

Number of Employees: 10

Street Address & Town/City: Route #1, Rutland, VT

Owner of Tank(s): NYNEX

Address: 125 High Street, Room 1006

Town/City: Boston MA 02110

Contact Person: Mr. Michael G. LaRou

Phone Number: (617) 743-0824

UST Facility ID Number: 912

Tank #	Product	Size	Condition
1	Gasoline	4000	Good, minor corrosion; pitting
2			
3			
4			

Reason for Tank Removal (check one): ☐ abandoned ☐ routine replacement
☒ tank or piping leaking ☐ liability

Replacement Tank(s)? ☐ yes ☒ no Number of Replacement Tanks: _____

DEC UST Permit(s) Obtained? ☒ yes ☐ no

DEQ-Permitted Tank(s) Still On-Site? ☐ yes ☒ no Number of Tanks: _____

Out of Service Tank(s) On-Site? ☐ yes ☒ no Number of Tanks: _____

Heating Oil Tank(s) On-Site? ☐ yes ☒ no No. of Tanks: _____ Size(s): _____

Any Waste Pumpage? ☒ yes ☐ no Estimated Volume: 250 Gallons

Transported By: Cyn Environmental Services Inc.

Size of Excavation (ft³): 372 Depth: 8 ft. Soil Type: Sand & Gravel

Concentrations Detected with PID: Peak = 280 Average = 200

Type of PID: HNU PT-101 10.2 ex probe

Number of Readings (please put locations on attached drawing):

Calibration Info. (date, time, type of gas): 12/20/94 0900 isobutylene

Free Phase Product Encountered? ☐ yes ☒ no Approx. Amount: N/A

Cont. Soils Stockpiled? ☐ yes ☒ no Amount (yd³): N/A

Cont. Soils Backfilled? ☒ yes ☐ no Amount (yd³): 50-60

Groundwater Encountered? ☐ yes ☒ no Depth to Groundwater: N/A

Monitoring Wells Installed? ☐ yes ☒ no Number: N/A Screen Depth: N/A

On-Site Drinking Well? ☒ yes ☐ no (if yes: ☐ rock ☐ gravel ☐ spring) unknown

Public Water Supply Well(s) Within 1/4 Mile? ☐ yes ☐ no

Distance to nearest: _____

Private Water Supply Well(s) Within 1/4 Mile? ☐ yes ☐ no How Many? _____

Samples Collected for Laboratory Analysis? ☒ yes ☐ no How Many? 2

(check all that apply: ☒ soil ☐ groundwater ☐ drinking water)

Receptors Affected (check all that apply):

☒ soil ☐ residential; # of houses/people: _____

☐ groundwater ☐ surface water; name/type of water body: _____

Signature of Owner or Authorized Representative:

Date: 12/22/94

AGENT FOR NYNEX - BILL WILCOX

Signature of Person Performing Site Assessment:

Date: 12/22/94

*** ATTACH OBSERVATIONS, CONCLUSIONS, AND DRAWING ON A SEPARATE PAGE ***

White - DEC File Copy

Yellow - DEC File Copy

Pink - Owner Copy

VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION
UNDERGROUND STORAGE TANK PROGRAM
TANK FULL FORM

TODAY'S DATE: 12/22/94

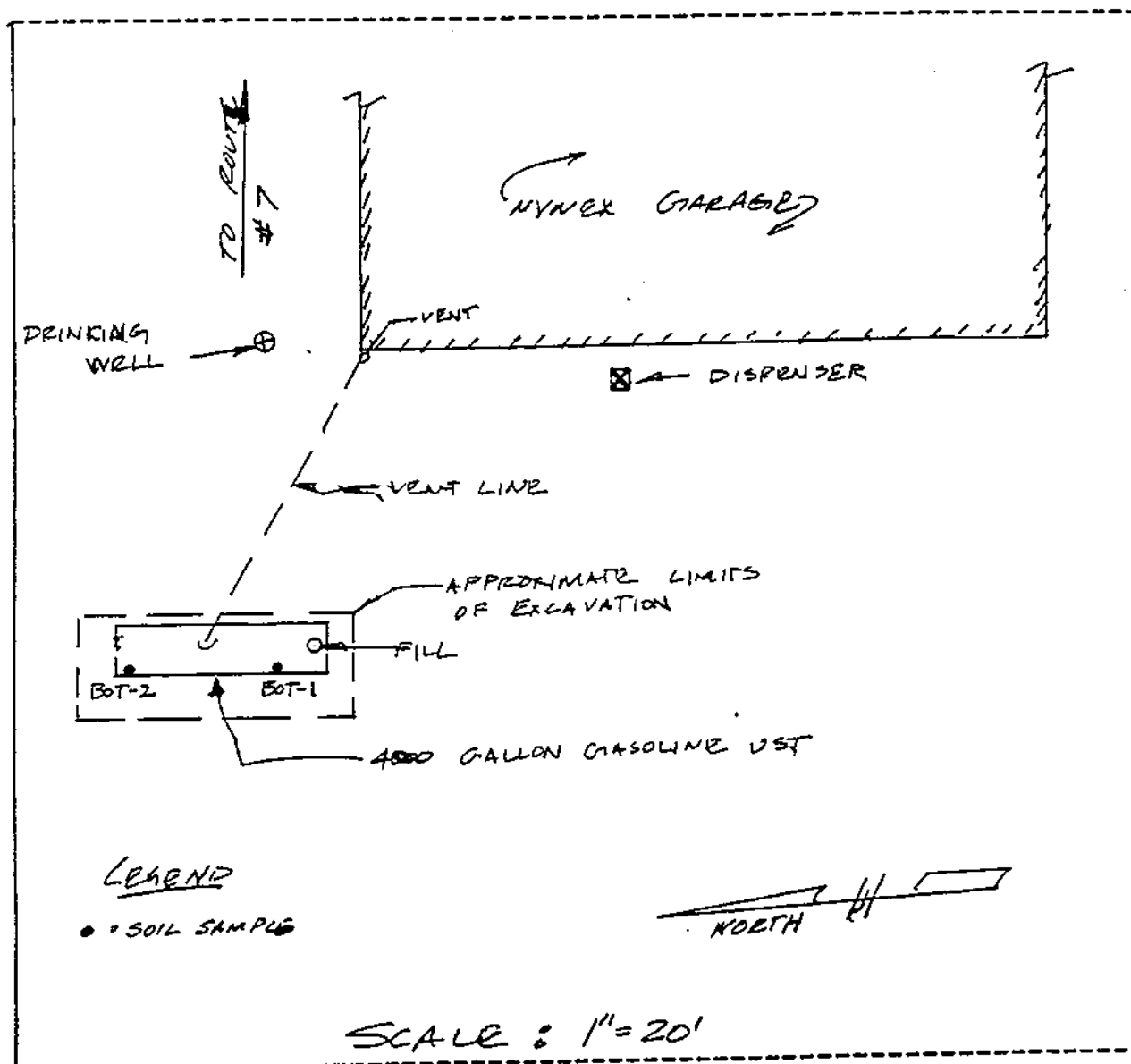
INSPECTOR: Bill Wilcox

DATE OF REMOVAL: 12/20/94

BUSINESS NAME: ENVIROTEL INC.
258 MAIN STREET
SUITE 202
MILFORD, MA 01757
(508) 478-5088

SITE DIAGRAM

Show location of all tanks and distance to permanent structures, sample points, areas of contamination and any pertinent site information. Indicate North arrow and major street names or route number.





TO
U.S. ROUTE 7.

NYNEX
ROUTE 7
RUTLAND, VT

NYNEX PRIVATE
DRINKING WATER WELL

FUEL DISPENSER REMOVED

SUPPLY LINE REMOVED

FORMER LOCATION OF 4000 GALLON
GASOLINE UST (64" X 24')

APPROXIMATE LIMITS OF EXCAVATION

G SIDE-1

G SIDE-4

G BOT-2

G SIDE-2

G BOT-1

G SIDE-3

HNu PID SUMMARY		
GASOLINE UST		
SAMPLE ID	DEPTH	HNu PID
G BOT-1	7.5'	280
G BOT-2	7.5'	280
G SIDE-1	4'-6'	180
G SIDE-2	4'-6'	170
G SIDE-3	4'-6'	220
G SIDE-4	4'-6'	160

LEGEND

○ FILL

● SOIL SAMPLE

⊕ DRINKING WATER WELL

NYNEX.

ROUTE 7
RUTLAND, VT

ENVIROTEL, INC.
258 MAIN STREET, SUITE 202
MILFORD, MA. 01757
(508) 478-5088

SCALE 1"=20'	APPROVED BY B'W	DRAWN BY SOFT-MEC
DATE 1/23/95	SHEET 1 OF 1	REVISED
TITLE SOIL SAMPLE AND UST LOCATION PLAN		
CLIENT NYNEX	JOB NUMBER NYNX0084.01	
LOCATION ROUTE 7 RUTLAND, VT	DRAWING NUMBER 122951	

ATTACHMENT 2
Hazardous Waste Manifest

PRESS HARD - YOU ARE WRITING THROUGH EIGHT COPIES. SEE REVERSE SIDE FOR DIRECTIONS



COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF HAZARDOUS WASTE
One Winter Street
Boston, Massachusetts 02108

use print or type. (Form designed for use on elite (12-pitch) typewriter.)

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator US EPA ID No. VT0980915466101815	Manifest Document No.	2. Page 1 of 1	Information in the shaded areas is not required by Federal law.	
3. Generator's Name and Mailing Address ATTN: MIKE LAROW		4. Generator's Phone 617-743-6824		5. State Waste ID MA 6364750		
5. Transporter 1 Company Name CYN OIL CORPORATION		6. US EPA ID Number MAD000230377		7. State Trans. ID US ROUTE 7 RUTLAND VT 05701		
7. Transporter 2 Company Name		8. US EPA ID Number		8. State Trans. ID		
9. Designated Facility Name and Site Address ENVIRONMENTAL WASTE RESOURCES, INC. 138 FREIGHT ST. WATERBURY, CT 06725		10. US EPA ID Number CTD072138969		11. State Facility ID Not Required		
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)		12. Containers No.	13. Total Quantity	14. Unit Wt/Vol	15. Waste No.	
a. R.O. WASTE GASOLINE MIXTURE (Gasoline & Water/ EPA 00013, UN1203 P.G. II		001	TC 902.50	G	001	
b.						
c.						
d.						
J. Additional Descriptions for Materials Listed Above (Include physical state and hazard code.)		K. Handling Codes for Wastes Listed Above				
a. Stream A24404		b. R.O. 100 lbs.				
c. Gasoline & Water		d. TC Benzene				
b.		c.				
d.		b.				
15. Special Handling Instructions and Additional Information DOT EMERGENCY RESPONSE GUIDE #27 24 Hour Emergency Spill Response # 1-617-464-6370						
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.						
Printed/Typed Name JOHN J. COLEMAN		Signature <i>John J. Coleman</i>		Date 1/22/94		
17. Transporter 1 Acknowledgement of Receipt of Materials		Signature <i>Raymond J. Brouillette</i>		Date 1/22/94		
Printed/Typed Name RAYMOND J. BROUILLETTE		Signature		Date		
18. Transporter 2 Acknowledgement of Receipt of Materials		Signature		Date		
Printed/Typed Name		Signature		Date		
19. Discrepancy Indication Space						

MA 6364750 COPY>1: FACILITY MAILED TO DESTINATION STATE

ATTACHMENT 3

Tank Yard Receipt Verification Documents

ALTERNATE STRAIGHT BILL OF LADING—SHORT FORM

Original—Not Negotiable

CYN Environmental Services
(Name of Carrier)

Shipper No. _____

Carrier No. _____

Date 12/21/94

TO: Consignee <u>Elnik's Scrap Yard</u>		FROM: Shipper <u>NYNEX</u>	
Street _____		Street <u>RT 7</u>	
Destination <u>Rutland</u> Zip Code _____		Origin <u>Rutland</u> Zip Code _____	

Route:		Weight (Subject to Correction)	RATE	CHARGES
No. of Shipping Units	Kind of Packaging, Description of Articles Special Marks and Exceptions			
1	4000 Gallon Gasoline Tank For Scrap cut cleaned & purged with Dry Ice			

REMI C-310/19 ADDRESS	COO Amt \$	COO FEE PREPAID \$ COLLECT \$	TOTAL CHARGES \$
-----------------------------	------------	-------------------------------------	---------------------

Note—Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding
\$ _____ per _____

Subject to Section 7 of the conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement.
The carrier shall not make delivery of this shipment without payment of freight and all other charges.
(Signature of Consignor.)

FREIGHT CHARGES
Check Appropriate Box:
☐ Freight prepaid ☐ Collect

RECEIVED, subject to the classifications and lawfully filed tariffs in effect on the date of the issue of this Bill of Lading, the property described above in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated above which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property over all or any portion of said route to destination and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the bill of lading terms and conditions in the governing classification on the date of shipment.
Shipper hereby certifies that he is familiar with all the bill of lading terms and conditions in the governing classification and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

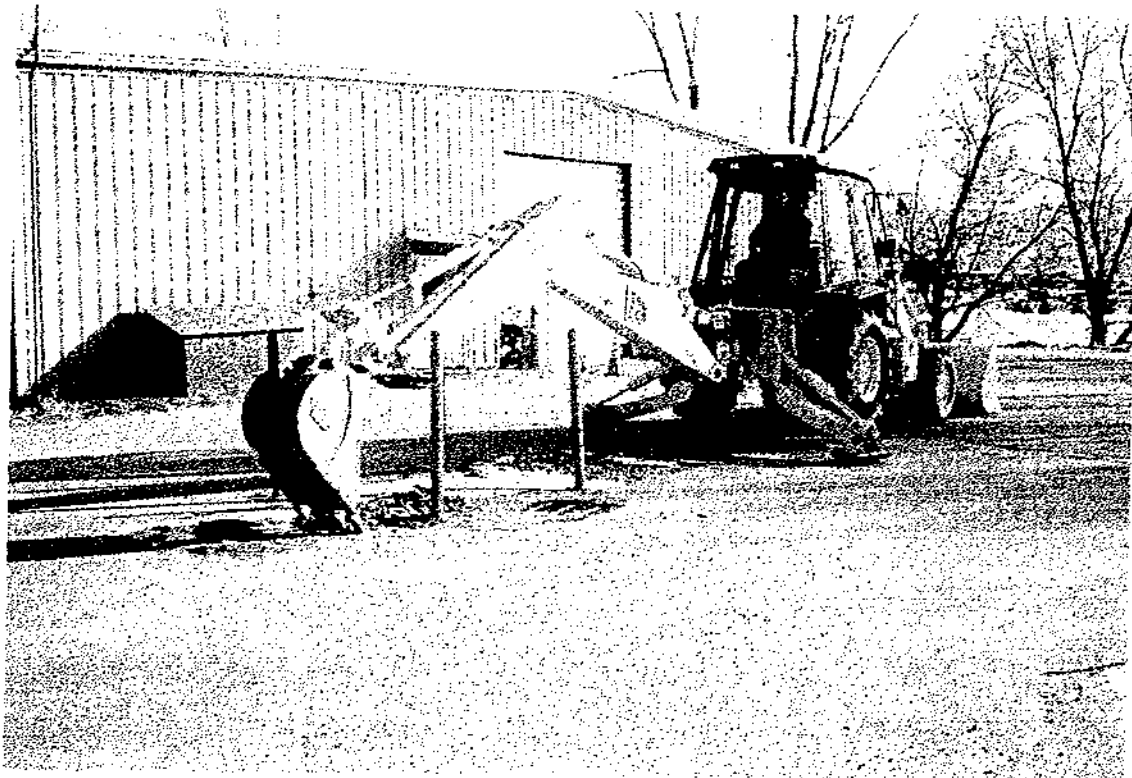
SHIPPER <u>NYNEX</u>	CARRIER <u>CYN OIL Corp</u>
PER _____	DATE _____

TOPS FORM No. 3841

LITHO in USA

BOL TO TRANS PORT TANK

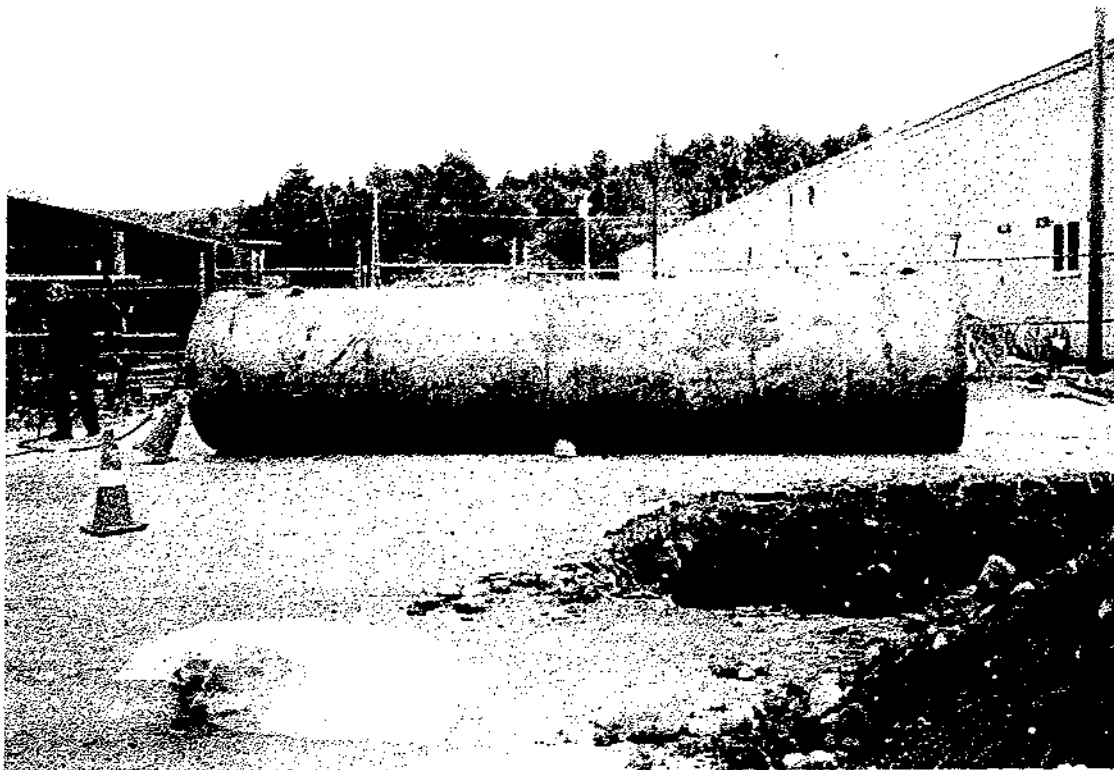
ATTACHMENT 4
Project Photographs



Photograph 1 - Site prior to excavation activity.



Photograph 2 - Excavation activity around 4,000 gallon gasoline UST.



Photograph 3 - The 4,000 gallon UST.



Photograph 4 - The 6-mil polyethylene sheeting lining the bottom of the excavation.

ATTACHMENT 5
UST and Soil Sample Location Plan

ATTACHMENT 6

Laboratory Data

GROUNDWATER ANALYTICAL

Groundwater Analytical, Inc.
228 Main Street
Buzzards Bay, MA 02532
Telephone (508) 759-4441
FAX (508) 759-4475

January 9, 1995

Mr. Bill Wilcox
EnviroTEL, Inc.
258 Main Street
Milford, MA 01757

Dear Bill:

Enclosed are the Volatile Organics and Gasoline Range Organics Analyses performed for the NYNEX Rutland Tank Pull project, number NYNX0084.01, sampled on 12-20-94. This project was processed for Standard Two Week turnaround.

A brief description of the Quality Assurance/Quality Control procedures employed by Groundwater Analytical, and a statement of our state certifications are contained within the report. This letter authorizes the release of the analytical results and should be considered a part of this report.

Should you have any questions concerning this report, please do not hesitate to contact me.

Sincerely,



Jonathan R. Sanford
Vice President

JRS/adw
Enclosures

GROUNDWATER ANALYTICAL

EPA METHOD 8260 (API Modified)
Gasoline Range Organics (GC/MS)

Field ID: G BOT-1
Project: NYNEX Rutland Tank Pull/NYNX0084.01
Client: EnviroTEL
Cont/Prsv: 250ml Glass/Cool
Matrix: Soil Percent Moisture: 24 %

Lab ID: 9591-03
Batch ID: VG-0899-E
Sampled: 12-20-94
Received: 12-22-94
Extracted: 12-29-94
Analyzed: 01-03-95

PARAMETER	CONCENTRATION (mg/Kg)	REPORTING LIMIT (mg/Kg)
Gasoline Range Organics	9,400	1,000

QC SURROGATE COMPOUNDS	SPIKED	MEASURED	RECOVERY	QC LIMITS
a, a, a-Trifluorotoluene	2.5	d	N/A	50 - 150 %
4-Bromofluorobenzene	2.5	d	N/A	50 - 150 %

d = Surrogate recovery outside recommended limits due to required sample dilution. BRL = Below Reporting Limit. Calculations based on dry sample weight. Quantification based on a Gasoline component standard. Method References: Method 8260 - GC/MS for Volatile Organics, Test Methods for Evaluating Solid Waste, US EPA SW-846, Third Edition (1986). Modification based on Method for Determination of Gasoline Range Organics, American Petroleum Institute (1990).

GROUNDWATER ANALYTICAL

EPA METHOD 8260 (API Modified)
Gasoline Range Organics (GC/MS)

Field ID: G BOT-2
Project: NYNEX Rutland Tank Pull/NYNX0084.01
Client: EnviroTEL
Cont/Prsv: 250ml Glass/Cool
Matrix: Soil Percent Moisture: 25 %

Lab ID: 9591-04
Batch ID: VG-0899-E
Sampled: 12-20-94
Received: 12-22-94
Extracted: 12-29-94
Analyzed: 01-03-95

PARAMETER	CONCENTRATION (mg/Kg)	REPORTING LIMIT (mg/Kg)
Gasoline Range Organics	17,000	2,500

QC SURROGATE COMPOUNDS	SPIKED	MEASURED	RECOVERY	QC LIMITS
a, a, a-Trifluorotoluene	2.5	d	N/A	50 - 150 %
4-Bromofluorobenzene	2.5	d	N/A	50 - 150 %

d = Surrogate recovery outside recommended limits due to required sample dilution. BRL = Below Reporting Limit. Calculations based on dry sample weight. Quantification based on a Gasoline component standard. Method References: Method 8260 - GC/MS for Volatile Organics, Test Methods for Evaluating Solid Waste, US EPA SW-846, Third Edition (1986). Modification based on Method for Determination of Gasoline Range Organics, American Petroleum Institute (1990).

GROUNDWATER ANALYTICAL

EPA METHOD 8020
Volatile Aromatics (GC/PID)

Field ID: G BOT-1
Project: NYNEX Rutland Tank Pull/NYNX0084.01
Client: EnviroTEL
Cont/Prsv: 125mL Glass/Cool
Matrix: Soil Percent Moisture: 24 %

Lab ID: 9591-01
Batch ID: VG3-0317-E
Sampled: 12-20-94
Received: 12-22-94
Analyzed: 12-30-94

PARAMETER	CONCENTRATION (ug/Kg)	REPORTING LIMIT (ug/Kg)
Methyl <i>tert</i> -Butyl Ether *	BRL	100,000
Benzene	120,000	20,000
Toluene	730,000	20,000
Chlorobenzene	BRL	20,000
Ethylbenzene	200,000	20,000
<i>meta</i> -and <i>para</i> -Xylene	610,000	20,000
<i>ortho</i> -Xylene	320,000	20,000
1,3-Dichlorobenzene	BRL	20,000
1,4-Dichlorobenzene	BRL	20,000
1,2-Dichlorobenzene	BRL	20,000
QC SURROGATE COMPOUND	SPIKED	MEASURED
a,a,a-Trifluorotoluene	1,500	d
		RECOVERY
		QC LIMITS
		77 - 119 %

d = Surrogate recovery outside recommended limits due to required sample dilution. Elevated reporting limit due to required sample dilution. BRL = Below Reporting Limit. * Non-target compound. Calculations based on dry sample weight. Method References: Method 8020 - Aromatic Volatile Organics, and Method 5030 - Methanol Extraction Procedure, Test Methods for Evaluating Solid Waste, US EPA SW-846, Third Edition (1986).

GROUNDWATER ANALYTICAL

EPA METHOD 8020
Volatile Aromatics (GC/PID)

Field ID: G BOT-2
Project: NYNEX Rutland Tank Pull/NYNX0084.01
Client: EnviroTEL
Cont/Prsv: 125mL Glass/Cool
Matrix: Soil Percent Moisture: 25 %

Lab ID: 9591-02
Batch ID: VG3-0317-E
Sampled: 12-20-94
Received: 12-22-94
Analyzed: 12-30-94

PARAMETER	CONCENTRATION (ug/Kg)	REPORTING LIMIT (ug/Kg)
Methyl tert-Butyl Ether *	BRL	100,000
Benzene	160,000	20,000
Toluene	1,300,000	20,000
Chlorobenzene	BRL	20,000
Ethylbenzene	300,000	20,000
meta-and para-Xylene	940,000	20,000
ortho-Xylene	500,000	20,000
1,3-Dichlorobenzene	BRL	20,000
1,4-Dichlorobenzene	BRL	20,000
1,2-Dichlorobenzene	BRL	20,000
QC SURROGATE COMPOUND	SPIKED	MEASURED
a,a,a-Trifluorotoluene	1,500	d
		RECOVERY
		N/A
		QC LIMITS
		77 - 119 %

d = Surrogate recovery outside recommended limits due to required sample dilution. Elevated reporting limit due to required sample dilution. BRL = Below Reporting Limit. * Non-target compound. Calculations based on dry sample weight. Method References: Method 8020 - Aromatic Volatile Organics, and Method 5030 - Methanol Extraction Procedure, Test Methods for Evaluating Solid Waste, US EPA SW-846, Third Edition (1986).

GROUNDWATER ANALYTICAL

QUALITY ASSURANCE Project Narrative

Project: NYNEX Rutland Tank Pull/NYNX0084.01
Client: EnviroTEL

Lab ID: 9591
Received: 12-22-94

A. Physical Condition of Sample(s)

This project was received by the laboratory in satisfactory condition. The sample(s) were received undamaged in appropriate containers with the correct preservation.

B. Project Documentation

This project was accompanied by Chain of Custody documentation, with the following amendments or corrections:

1. Samples 9591-01 and -02 for analysis by EPA Method 8020 were received in one 125mL glass container each.
2. Samples 9591-03 and -04 for Gasoline Range Organics analysis were received in one 250mL glass container each.
3. Samples with multiple containers for different analyses should be listed on separate lines on the Chain of Custody.

C. Analysis of Sample(s)

No analytical anomalies or non-conformances were noted by the laboratory during the processing of these samples. All data contained within this report is released without qualification.

IN 0404

ORIGINAL → LAB YELLOW → CLIENT

GROUNDWATER ANALYTICAL

QUALITY ASSURANCE QA/QC Program Statement

Groundwater Analytical conducts an active Quality Assurance program to ensure the production of high quality, valid data. This program closely follows the guidance provided by *Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans*, US EPA QAMS-005/80 (1980), and *Test Methods for Evaluating Solid Waste*, US EPA SW-846, Third Edition (Revised 1992).

Quality Control protocols include Standard Operating Procedures (SOPs) developed for each analytical method. SOPs are derived from US EPA methodologies and other established references. Equipment and facility maintenance conform to Good Laboratory Practices (GLPs). Standards are prepared from commercially obtained reference materials of certified purity, and documented for traceability.

Quality Assessment protocols for most organic analyses include a minimum of one calibration standard, one method blank, one laboratory control sample, and one matrix spike and one sample duplicate for each sample batch. All samples, standards, blanks, laboratory control samples and matrix spikes are spiked with internal standards and surrogate compounds. GC/MS systems are tuned to BFB ion abundance criteria daily, or for each 12 hour operating period, whichever is more frequent.

Quality Assessment protocols for most inorganic analyses include a minimum of one calibration standard, one method blank, one laboratory control sample, one matrix spike and one sample duplicate for each sample batch. Standard curves are derived from one reagent blank and four concentration levels. Curve validity is verified by standard recoveries within plus or minus ten percent of the curve.

Batches are used as the basic unit for Quality Assessment. A Batch is defined as twenty or fewer samples which are analyzed together with the same method sequence and the same lots of reagents and with the same manipulations common to each sample within the same continuum of time within a 24 hour period.

Method Blanks are used to assess the level of contamination present in the analytical system. Method Blanks consist of reagent water or an aliquot of sodium sulfate. Method Blanks are taken through all the appropriate steps of an analytical method. Sample data reported is not corrected for blank contamination.

Laboratory Control Samples are used to assess the accuracy of the analytical method. A Laboratory Control Sample consists of reagent water or sodium sulfate spiked with a group of target compounds representative of the method analytes. Accuracy is defined as the degree of agreement of a measured value with the true or expected value. Percent Recoveries for the Laboratory Control Sample are calculated to assess accuracy.

Surrogate Compounds are used to assess the effectiveness of the method in dealing with each sample matrix. Surrogate Compounds are organic compounds which are similar to organic analytes of interest in chemical behavior, but which are not normally found in environmental samples. Percent Recoveries are calculated for each Surrogate Compound.

GROUNDWATER ANALYTICAL

QUALITY ASSURANCE Laboratory Control Sample Recovery

Category: EPA Method 8020/Methanol Extraction
Batch ID: VG3-0317-EL
Matrix: Soil
Units: ug/Kg

<u>Laboratory Control Sample</u>				
ANALYTE	SPIKE ADDED	SPIKED RESULT	PERCENT RECOVERY	QC LIMITS
Benzene	2,500	2,500	100 %	66-142
Toluene	2,500	2,300	92 %	59-139
Chlorobenzene	2,500	2,300	92 %	60-133

All calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

GROUNDWATER ANALYTICAL

QUALITY ASSURANCE Method Blank

Category: EPA Method 8020/Methanol Extraction
Batch ID: VG3-0317-EB1
Matrix: Soil

PARAMETER	CONCENTRATION (ug/Kg)	REPORTING LIMIT (ug/Kg)
Methyl <i>tert</i> -Butyl Ether *	BRL	250
Benzene	BRL	50
Toluene	BRL	50
Chlorobenzene	BRL	50
Ethylbenzene	BRL	50
<i>meta</i> -and <i>para</i> -Xylene	BRL	50
<i>ortho</i> -Xylene	BRL	50
1,3-Dichlorobenzene	BRL	50
1,4-Dichlorobenzene	BRL	50
1,2-Dichlorobenzene	BRL	50
QC SURROGATE COMPOUND	SPIKED	MEASURED
a,a,a-Trifluorotoluene	1,500	1,400
		RECOVERY
		97 %
		QC LIMITS
		77 - 119 %

BRL = Below Reporting Limit. * Non-target compound. Calculations based on dry sample weight. Method References: Method 8020 - Aromatic Volatile Organics, and Method 5030 - Methanol Extraction Procedure, Test Methods for Evaluating Solid Waste, US EPA SW-846, Third Edition (1986).

**GROUNDWATER
ANALYTICAL**

**QUALITY ASSURANCE
Laboratory Control Sample Recovery**

Category: EPA Method 8260 (API Modified)
Batch ID: VM-0899-EL
Matrix: Soil
Units: mg/Kg

Laboratory Control Sample

ANALYTE	SPIKE ADDED	SPIKED RESULT	PERCENT RECOVERY	QC LIMITS
Gasoline	10	7.0	69 %	50-150

Calculations performed prior to rounding. Quality Control Limits are defined by the methodology, or alternatively based upon the historical average recovery plus or minus three standard deviation units.

**GROUNDWATER
ANALYTICAL**

QUALITY ASSURANCE
Method Blank

Category: EPA Method 8260 (API Modified)
Batch ID: VG-0899-EB1
Matrix: Soil

PARAMETER	CONCENTRATION (mg/Kg)	REPORTING LIMIT (mg/Kg)		
Gasoline Range Organics	BRL	2.5		
QC SURROGATE COMPOUND	SPIKED	MEASURED	RECOVERY	QC LIMITS
a, a, a-Trifluorotoluene	2.5	1.7	68 %	50 - 150 %
4-Bromofluorobenzene	2.5	1.6	65 %	50 - 150 %

BRL = Below Reporting Limit. Calculations based on dry sample weight. Method References: Method 8260 - GC/MS for Volatile Organics, Test Methods for Evaluating Solid Waste, US EPA SW-846, Third Edition (1986). Modification based on Method for Determination of Gasoline Range Organics, American Petroleum Institute.

GROUNDWATER ANALYTICAL

**QUALITY ASSURANCE
State Certification**

CONNECTICUT Department of Health Services

**Certificate Number
PH-0586**

Potable Water, Wastewater/Trade Waste, Sewage/Effluent, and Soil: Purgeable Halocarbons, Purgeable Aromatics, Pesticides, Phenols, Oil and Grease, Aluminum, Antimony, Arsenic, Beryllium, Cadmium, Chromium-T, Chromium-VI, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Tin, Vanadium, Zinc, Cyanide, TDS, Ammonia, TKN, Nitrate, Ortho-Phosphate, Alkalinity, Hardness, Chloride, Fluoride, pH, Conductivity

MAINE Department of Human Services

**Certificate Number
N/A**

Reciprocal certification in accordance with Massachusetts certification for drinking water parameters.

MASSACHUSETTS Department of Environmental Protection

**Certificate Number
MA103**

Potable Water: Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Selenium, Silver, Sodium, Thallium, Nitrate-N, Fluoride, Cyanide, Calcium, Total Alkalinity, Total Dissolved Solids, pH, Langelier Index, Trihalomethanes, Volatile Organic Compounds, 1,2-Dibromoethane, 1,2-Dibromo-3-chloropropane. Non-Potable Water: Aluminum, Antimony, Arsenic, Beryllium, Cadmium, Chromium, Cobalt, Copper, Iron, Lead, Manganese, Mercury, Molybdenum, Nickel, Selenium, Silver, Strontium, Thallium, Titanium, Vanadium, Zinc, pH, Specific Conductivity, Total Dissolved Solids, Total Hardness, Calcium, Magnesium, Sodium, Potassium, Total Alkalinity, Chloride, Fluoride, Ammonia-N, Nitrate-N, Kjeldahl-N, Orthophosphate, Total Cyanide, Oil and Grease, Total Phenolics, Volatile Halocarbons, Volatile Aromatics, Chlordane, Aldrin, Dieldrin, DDD, DDE, DDT, Heptachlor, Heptachlor Epoxide, Polychlorinated Biphenyls (Water), Polychlorinated Biphenyls (Oil).

MICHIGAN Department of Public Health

**Certificate Number
N/A**

Drinking Water: Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Cyanide, Fluoride, Lead, Mercury, Nickel, Nitrate, Nitrite, Selenium, Silver, Sodium, Sulfate, Thallium, Total Trihalomethanes, Regulated and Unregulated Volatile Organic Chemicals.

NEW HAMPSHIRE Department of Environmental Services

**Certificate Number
202791-A/B**

Drinking Water: Lead, Selenium, Silver, Thallium, Trihalomethanes, Volatile Organics, Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Mercury, Nickel, Fluoride, Total Filterable Residue, Calcium, Alkalinity, pH, Corrosivity, Total Cyanide, Vinyl Chloride, DBCP and EDB. Wastewater: Arsenic, Beryllium, Cadmium, Cobalt, Copper, Iron, Mercury, Manganese, Nickel, Lead, Selenium, Zinc, Antimony, Silver, Thallium, Molybdenum, Strontium, pH, Total Hardness, Calcium, Sodium, Potassium, Total Alkalinity, Chloride, Fluoride, Nitrate-N, TKN, Orthophosphates, Total Phenolics, Oil & Grease, PCBs in Oil, Pesticides, Volatile Organics, Titanium, Total Cyanide, PCBs in Water.

RHODE ISLAND Department of Health

**Certificate Number
A54**

Potable Water: Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Selenium, Silver, Thallium, Nitrate, Nitrite, Fluoride, Turbidity, Chlorine, Total Filterable Solids, Calcium, pH, Alkalinity, Sodium, Corrosivity, Sulfate, Cyanide, Trihalomethanes, Chlorinated Hydrocarbon Pesticides, PCBs, Herbicides, Volatile Organic Compounds (EPA 524.2 and 504) and PAHs. Non-potable and Waste Waters: Aluminum, Arsenic, Beryllium, Cadmium, Cobalt, Chromium, Copper, Iron, Mercury, Manganese, Nickel, Lead, Selenium, Vanadium, Zinc, Antimony, Silver, Thallium, Molybdenum, Strontium, Titanium, pH, Conductance, TDS, Hardness, Calcium, Magnesium, Sodium, Potassium, Alkalinity, Chloride, Fluoride, Sulfate, Ammonia, Nitrate, Orthophosphate, TKN, Total Phosphorous, Cyanide, Non-filterable solids, Oil and Grease, Total Phenolics, Chlorine, PCBs in Water, PCBs in Oil, Chlorinated Hydrocarbon Pesticides, Volatile Halocarbons, Volatile Aromatics, Acid Extractables and Base/Neutral Extractables.

ATTACHMENT 7

Site Investigation Expressway Notification



State of Vermont

Dept. of Fish and Wildlife
Dept. of Forests, Parks and Recreation
Dept. of Environmental Conservation
Geologist
Resources Conservation Council
SERVICE FOR THE HEARING IMPAIRED
-0191 TDD>Voice
-0195 Voice>TDD

AGENCY OF NATURAL RESOURCES Department of Environmental Conservation

Hazardous Materials Management Division
103 South Main Street/West Office
Waterbury, Vermont 05671-0404
(802) 241-3888
FAX (802) 244-5141

SITE INVESTIGATION EXPRESSWAY NOTIFICATION

Site Owner: NYNEX leased property (owner-I.R. Levine)

Site Name, Town: NYNEX GARage, Rte 7, Rutland, Vermont

☒ Yes, this site will participate in the Site Investigation Expressway Process.

☐ No, this site will not participate in the Site Investigation Expressway Process.

If yes, please complete the checklist below:

☒ Contamination present in soils above action levels ☒ Yes ☐ No

If yes, summarize levels:

HNu PID results sampled with a 10 ? electron volt lamp,
ranged from 170 ppm to 280 ppm in the tank excavation.

☒ Free product observed ☐ Yes ☒ No

☒ Groundwater contamination observed ☐ Yes ☒ No

☒ Surface water contamination observed ☐ Yes ☒ No

☒ Suspected release of hazardous substances ☒ Yes ☐ No

If yes, please explain:

There is a suspected release of petroleum hydrocarbons
from the former 4,000-gallon UST.

☒ Affected receptors ☒ Yes ☐ No

If yes, please identify receptors including names and addresses of third party receptors:

NYNEX private well located on the property.

East Creek abuts the southern portion of the property.

Wetlands are located on the southern portion of the property.

Please provide an estimated date of when you expect to submit Site Investigation Report: May 15, 1995